

THE UNIVERSITY OF TEXAS AT AUSTIN
Cockrell School of Engineering
Resume

FULL NAME: Moriba Kemessia Jah **TITLE:** Associate Professor

DEPARTMENT: Aerospace Engineering and Engineering Mechanics

EDUCATION:

Embry-Riddle Aeronautical University	Aerospace Engineering	B.S.	1999
University of Colorado (Boulder)	Aerospace Engineering Sci	M.S.	2001
University of Colorado (Boulder)	Aerospace Engineering Sci	Ph.D.	2005

PROFESSIONAL REGISTRATION: Not Registered

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

Associate Professor (with Tenure), The University of Texas at Austin,

- Department of Aerospace Engineering and Engineering Mechanics, September 2020 – present
- Mrs. Pearlie Dashiell Henderson Centennial Fellowship in Engineering

Affiliate Faculty, The University of Texas at Austin

- Environmental Sciences Institute, October 2019 – present

Affiliate Researcher, Massachusetts Institute of Technology

- Jan 2021 - Present

Visiting Professor, Australian National University

- Research School of Aerospace, Mechanical, and Environmental Engineering (RSAMEE), July 2019 –Jan 2021

Core Faculty, The University of Texas at Austin,

- Oden Institute for Computational Engineering and Sciences, August 2018 – present

Director, The University of Texas at Austin,

- Oden Institute Computational Astronautical Sciences and Technologies Group, August 2018 - present

Associate Professor (Tenure-Track), The University of Texas at Austin,

- Department of Aerospace Engineering and Engineering Mechanics, April 2017 – September 2020
- Statistics and Data Science Department (Courtesy), October 2017 – present

Program Lead and Distinguished Scholar, The University of Texas at Austin,

- Robert Strauss Center for International Security and Law: Space Security and Safety, March 2017 - present

SERC-Funded Visiting Fellow, Royal Melbourne Institute of Technology University (Melbourne, Australia), May 2016 and May 2017

Adjunct Professor, Royal Melbourne Institute of Technology University, School of Science, SPACE Research Centre, 2016 – Present

Associate Research Professor (Continuing-Status/Tenure-Equivalent), The University of Arizona,

- Geosciences Department (Courtesy), March 2016 – April 2017
- Aerospace and Mechanical Engineering Department (Courtesy), September 2016 – April 2017
- Electrical and Computer Engineering Department (Courtesy), April 2016 – April 2017
- College of Engineering, January 2016 – April 2017

Rector-Funded Visiting Fellow, University of New South Wales (Canberra, Australia) May-June 2014

OTHER PROFESSIONAL EXPERIENCE:

U.S. Air Force Security Police, October 1988 – October 1992 (Honorably Discharged)
NASA Space Grant Researcher, January 1996 – May 1999
Microcosm Inc., Space Mission Design and Orbital Analyst, May 1997 – May 1999
NASA Jet Propulsion Laboratory, Spacecraft Navigator, May 1999 – August 2006
Oceanit Laboratories, Maui Division, Senior Scientist, August 2006 – October 2007
Air Force Research Laboratory, Directed Energy Directorate, Team Lead, Astrodynamics Program, October 2007 – June 2010
Air Force Research Laboratory, Space Vehicles Directorate, Technical Advisor, Guidance, Navigation, & Control Program, June 2010 - September 2014
Air Force Research Laboratory, Space Vehicles Directorate, Mission Lead, Space Situational Awareness, September 2014 - January 2016
Director of Space Object Behavioral Sciences Initiative, The University of Arizona, Defense and Security Research Institute, January 2016 – April 2017
Expert Contributor “Source of the Week,” National Public Radio (NPR) (2019 – present)
Contributing Writer “Jahniverse,” Aerospace America, American Institute of Aeronautics and Astronautics (AIAA) (2020 – present)
Host “Space Café: Moriba’s Vox Populi,” SpaceWatch Global Webcast Series (2020 – present)
Executive Mentor, Patti Grace Smith Fellowship (2021 – present)
Executive Mentor, Zed Factor Fellowship (2021 – present)
Non-Resident Fellow, United Nations Institute for Disarmament Research (UNIDIR) (2019 – present)
Non-Resident Scholar, Carnegie Space Project, Carnegie Endowment for International Peace (2021 – present)
Co-Founder and Chief Scientist, Privateer Space Inc. (2021 – present)

MAJOR CONSULTING PROJECTS

Slingshot Aerospace, Technical Advisor, 2019 – Present
NorthStar Earth & Space, Technical Advisor, 2021 – Present
Privateer Space Inc., Chief Scientific Advisor, 2021 - Present

HONORS AND AWARDS:

Senior Airman “Below-the-Zone” promotion, 1990
1990 Strategic Air Command, SP Airman of the Year
National Defense Service Medal (1991)
Honorable Discharge, U.S. Air Force (1992)
2001 *NASA Group Achievement Award* and *Aviation Week & Space Technology Laurel Award* for the superb navigation of the Mars Odyssey spacecraft to Mars
2005 *NASA Group Achievement Award* for the flawless navigation of the Mars Reconnaissance Orbiter to Mars
2007 *NASA Space Act Award* “for the creative development of a scientific contribution which has been determined to be of significant value in the advancement of the space and aeronautical activities of NASA, and is entitled: Inertial Measurements for Aeroassisted Navigation (IMAN)”
2009 *NASA Group Achievement Award* for the Nanosail-D mission support

2009 *AFRL R. Earl Good Award* “for significant team contributions to the AFRL mission or image outside of AFRL and for accomplishments that have had a significant impact and enhanced the creditability of AFRL.”

Hayabusa Certificate of Appreciation (2010): “in recognition of your significant contributions to the completion of Hayabusa’s round trip space mission in 2010.”

Elected to Senior Member of the IEEE, 2010

Elected to Associate Fellow of the AIAA, 2011

2013 *AFRL International Award*

2013 *AFRL/RV Technology Transfer/Transition Achievement Award*

Elected as Fellow of the RAS, 2014

Elected as Fellow of the AAS, 2014

Elected as Fellow of the IAASS, 2015

Elected as Fellow of the Air Force Research Laboratory (AFRL), 2015

University of Colorado Distinguished Engineering Alumni Award (DEAA), 2016

AIAA Momentum Member Spotlight – June 2016

(<http://www.aiaa.org/memberspotlightJune2016/>)

Elected as Corresponding Member of the IAA, 2018

Elected as Fellow of the AIAA, 2019

Selected as Fellow of TED, 2019

Elected as Member of the IISL, 2019

Selected as Fellow of The Op-Ed Project, Public Voices, 2020

Selected as Individual Member of the IAU, 2020

Mrs. Pearlie Dashiell Henderson Centennial Fellowship in Engineering

Elected as Full Member of the IAA, 2020

Embry-Riddle Aeronautical University Distinguished Alumni Award, 2021

Elected as Fellow of the Explorers Club, 2021

Selected as Explorers Club 50: 50 People Changing The World, 2022

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES

Fellow, International Association for the Advancement of Space Safety (IAASS), Member 2015 - Present

Fellow, American Astronautical Society (AAS), Member 2004 - Present

Fellow, Royal Astronomical Society (RAS), Member 2014 – Present

Fellow, American Institute of Aeronautics and Astronautics (AIAA), Member 1996 - Present

Senior Member, Institute of Electrical and Electronics Engineers (IEEE), Member 2010 - Present

Member, International Society for Information Fusion (ISIF), Member 2009 – Present

Corresponding Member, International Academy of Astronautics (IAA), 2018 – 2020

Full Member, International Academy of Astronautics (IAA), 2020 – Present

Member, International Institute of Space Law (IISL), 2019 – present

Individual Member, International Astronomical Union (IAU), 2020 – present

Fellow, Explorers Club, 2021 - present

UNIVERSITY COMMITTEES/ADMINISTRATIVE ASSIGNMENTS:

Cockrell School of Engineering

Member, Diversity and Inclusivity Committee, 2017 – Present

Aerospace Engineering & Engineering Mechanics

Member Social Platform Committee 2021 - Present

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES, EDITORIAL BOARDS, AND CONFERENCES ORGANIZED/CHAIR:

Outside Committees

Chair, AAS Space Surveillance Technical Committee (2009 – 2016)

Chair, AIAA Astrodynamics Technical Committee (2016 – 2018)

Member, International Academy of Astronautics (IAA) Space Debris Permanent Committee (2014 - Present)

Chair, NATO SCI-ET-003 Technical Solutions to a Common Operating Picture for Space Domain Awareness Exploratory Team, (2014 – 2015)

Chair, NATO SCI-279-TG Technical Solutions to a Common Operating Picture for Space Domain Awareness Task Group, (2015 – 2018)

Member, NATO SCI-ET-036 Collaborative Space Domain Awareness Data Collection and Fusion Experiment (2017 – 2018)

Member, NATO SCI-311-RTG Collaborative Space Domain Awareness Data Collection and Fusion Experiment (2018 – Present)

Chair, NATO SCI-ET-056 Role of Data and Decisions on the Space Operations Floor Exploratory Team, (2020 – Present)

Member, International Astronautical Federation (IAF) Astrodynamics Committee (2014 - Present)

Member, International Astronautical Federation (IAF) Space Security Committee (2018 - Present)

Member, International Astronautical Federation (IAF) Space Traffic Management Committee (2020 - Present)

Member, AAS Space Flight Mechanics Technical Committee (2006 – 2011)

Technical Chair, 21st AAS/AIAA Space Flight Mechanics Meeting (2011)

Member, Research Council, Research Initiative of Sustainable Space Logistics (RISSL), Ecole Polytechnique Federale de Lausanne (EPFL) Space Center (eSpace) (2020 – Present)

Member, National Academy of Sciences Engineering and Medicine (NASSEM) Committee on International Security and Arms Control (CISAC) Space Security Working Group (2020 – Present)

Chair, International Academy of Astronautics (IAA) Space Traffic Management Permanent Committee (2020 - Present)

Chair, AIAA Goddard Astronautics Award Subcommittee (2020 – present)

Member IEEE AESS Judith A. Resnik Space Award Subcommittee (2020 – present)

Conference Activities

Member, NSSDF Technical Committee (2012 – 2015)

Technical Committee Member, International Society of Information Fusion Conference (2010, 2012, 2013)

National Chairperson, Space Debris, 35th Annual AAS Guidance and Control Conference (2012)

Organizer and Moderator, 1st AAS Space Surveillance Workshop, London, UK (2011)

Session Chair, AAS; AIAA; IAC; ISIF conferences and symposia (2002 – present)

Journal Activities

Associate Editor, *Advances in Space Research* (Elsevier), Journal of the Committee on Space Research (COSPAR), a Scientific Committee of the International Council for Science (2017 – Present)

Co-Editor, *Acta Astronautica* (Elsevier), Transdisciplinary Astronautical Arts, Sciences, and Engineering, Journal of the International Academy of Astronautics (IAA) (2020 – present)

Field Editor, *Journal of Space Safety Engineering* (Elsevier), Journal of the International Association for the Advancement of Space Safety (IAASS) (2021 – present)

Guest Editor, AIAA Journal of Guidance, Control, and Dynamics Special Issue: Space Domain Awareness

Associate Editor, *IEEE Transactions on Aerospace and Electronic Systems* (2011 – 2017)

Associate Editor, *IEEE Aerospace and Electronic Systems Magazine* (2011 – 2017)

OTHER PROFESSIONAL HIGHLIGHTS:

Invited External Reviewer for Montana NASA EPSCoR Research Award Selection (2016)

Secretary of the Air Force Invited Member, US Air Force Science & Technology Investments 2030 Expert Recommendations Panel, Science and Technology Policy Institute, Washington DC, July (2018)

Chair, NASA Space Weather to Research (SWO2R) Satellite Drag Review Panel, Headquarters Heliophysics Science Mission Directorate (2021)

Current Review Activities:

AIAA Journal of Guidance, Control, and Dynamics

IAA Acta Astronautica (Elsevier)

COSPAR Advances in Space Research (Elsevier)

AFOSR Proposals

PUBLICATIONS:**Refereed Journal Publications**

1. Antreasian, P. G., Baird, D. T., Border, J. S., Burkhart, P. D., Graat, E. J., **Jah, M. K.**, ... Portock, B. M. (2005). 2001 Mars Odyssey orbit determination during interplanetary cruise. *Journal of Spacecraft and Rockets*, 42(3), 394–405. <http://doi.org/10.2514/1.15222>
2. **Jah, M. K.**, Lisano, M. E., Born, G. H., & Axelrad, P. (2008). Mars aerobraking spacecraft state estimation by processing inertial measurement unit data. *Journal of Guidance, Control, and Dynamics*, 31(6), 1802–1813. <http://doi.org/10.2514/1.24304>
3. Wetterer, C. J., & **Jah, M.** (2009). Attitude estimation from light curves. *Journal of Guidance, Control, and Dynamics*, 32(5), 1648–1651. <http://doi.org/10.2514/1.44254>
4. Kelecy, T., & **Jah, M.** (2010). Detection and orbit determination of a satellite executing low thrust maneuvers. *Acta Astronautica*, 66(5–6), 798–809. <http://doi.org/10.1016/j.actaastro.2009.08.029>
5. Tombasco, J., Axelrad, P., & **Jah, M.** (2010). Specialized coordinate representation for dynamic modeling and orbit estimation of geosynchronous orbits. *Journal of Guidance, Control, and Dynamics*, 33(6), 1824–1836. <http://doi.org/10.2514/1.48903>
6. Kelecy, T., & **Jah, M.** (2011). Analysis of high area-to-mass ratio (HAMR) GEO space object orbit determination and prediction performance: Initial strategies to recover and

- predict HAMR GEO trajectories with no a priori information. *Acta Astronautica*, 69(7–8), 551–558. <http://doi.org/10.1016/j.actaastro.2011.04.019>
7. Kececy, T., **Jah, M.**, & DeMars, K. (2012). Application of a Multiple Hypothesis Filter to near GEO high area-to-mass ratio space objects state estimation. *Acta Astronautica*, 81(2), 435–444. <http://doi.org/10.1016/j.actaastro.2012.08.006>
 8. DeMars, K. J., **Jah, M. K.**, & Schumacher Jr., P. W. (2012). Initial orbit determination using short-arc angle and angle rate data. *IEEE Transactions on Aerospace and Electronic Systems*, 48(3), 2628–2637. <http://doi.org/10.1109/TAES.2012.6237613>
 9. DeMars, K. J., & **Jah, M. K.** (2013). Probabilistic initial orbit determination using Gaussian mixture models. *Journal of Guidance, Control, and Dynamics*, 36(5), 1324–1335. <http://doi.org/10.2514/1.59844>
 10. DeMars, K. J., Bishop, R. H., & **Jah, M. K.** (2013). Entropy-based approach for uncertainty propagation of nonlinear dynamical systems. *Journal of Guidance, Control, and Dynamics*, 36(4), 1047–1057. <http://doi.org/10.2514/1.58987>
 11. Früh, C., Kececy, T. M., & **Jah, M. K.** (2013). Coupled orbit-attitude dynamics of high area-to-mass ratio (HAMR) objects: Influence of solar radiation pressure, Earth's shadow and the visibility in light curves. *Celestial Mechanics and Dynamical Astronomy*, 117(4), 385–404. <http://doi.org/10.1007/s10569-013-9516-5>
 12. Früh, C., **Jah, M.**, (2013). Attitude and Orbit Propagation of High Area-to-Mass Ratio (HAMR) Objects Using a Semi-Coupled Approach. *Journal of the Astronautical Sciences*, pp. 1-19, published 9 July 2014.
 13. Früh, C., & **Jah, M. K.** (2014). Coupled orbit-attitude motion of high area-to-mass ratio (HAMR) objects including efficient self-shadowing. *Acta Astronautica*, 95(1), 227–241. <http://doi.org/10.1016/j.actaastro.2013.11.017>
 14. Wetterer, C. J., Linares, R., Crassidis, J. L., Kececy, T. M., Ziebart, M. K., **Jah, M. K.**, & Cefola, P. J. (2014). Refining space object radiation pressure modeling with bidirectional reflectance distribution functions. *Journal of Guidance, Control, and Dynamics*, 37(1), 185–196. <http://doi.org/10.2514/1.60577>
 15. Vishwajeet, K., Singla, P., & **Jah, M.** (2014). Nonlinear uncertainty propagation for perturbed two-body orbits. *Journal of Guidance, Control, and Dynamics*, 37(5), 1415–1425. <http://doi.org/10.2514/1.G000472>
 16. DeMars, K. J., Cheng, Y., & **Jah, M. K.** (2014). Collision probability with Gaussian mixture orbit uncertainty. *Journal of Guidance, Control, and Dynamics*, 37(3), 979–984. <http://doi.org/10.2514/1.62308>
 17. Linares, R., **Jah, M. K.**, Crassidis, J. L., & Nebelecky, C. K. (2014). Space object shape characterization and tracking using light curve and angles data. *Journal of Guidance, Control, and Dynamics*, 37(1), 13–25. <http://doi.org/10.2514/1.62986>
 18. Kececy, T., **Jah, M.**, Baldwin, J., & Stauch, J. (2014). High Area-to-Mass ratio object population assessment from data/track association. *Acta Astronautica*, 96(1), 166–174. <http://doi.org/10.1016/j.actaastro.2013.11.037>
 19. Linares, R., **Jah, M. K.**, Crassidis, J. L., Leve, F. A., & Kececy, T. (2014). Astrometric and photometric data fusion for inactive space object mass and area estimation. *Acta Astronautica*, 99(1), 1–15. <http://doi.org/10.1016/j.actaastro.2013.10.018>
 20. Leve, F., & **Jah, M.** (2014). Spacecraft actuator alignment determination through null-motion excitation. *IEEE Transactions on Aerospace and Electronic Systems*, 50(3), 2336–2342. <http://doi.org/10.1109/TAES.2013.120187>

21. Stauch, J., & **Jah, M.** (2015). Unscented schmidt-Kalman filter algorithm. *Journal of Guidance, Control, and Dynamics*, 38(1), 117–123. <http://doi.org/10.2514/1.G000467>
22. DeMars, K. J., Hussein, I. I., Frueh, C., **Jah, M. K.**, & Erwin, R. S. (2015). Multiple-object space surveillance tracking using finite-set statistics. *Journal of Guidance, Control, and Dynamics*, 38(9), 1741–1756. <http://doi.org/10.2514/1.G000987>

Refereed Journal Publications (while in rank at UT Austin)[[UT Austin students](#) [UT Austin PostDocs](#) [UT Austin Faculty](#)]

1. Psiaki, M. L., Weisman, R., **Jah, M.**, (2017). Gaussian Mixture Approximation of the Angles-Only Initial Orbit Determination Likelihood Function. *Journal of Guidance, Control, and Dynamics*, Vol. 40, 2807-2819. <https://doi.org/10.2514/1.G002615>
2. Coder, R., Holzinger, M., **Jah, M.**, (2017). Space Object Active Control Mode Inference Using Light Curve Inversion. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-13. <https://doi.org/10.2514/1.G002224>
3. Coder, R., Wetterer, C., Hamada, K., **Jah, M.**, Holzinger, M., (2017). Inferring Active Control Mode of the Hubble Space Telescope Using a Rao-Blackwellized Particle Filter. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-7. <https://doi.org/10.2514/1.G002223>
4. Stauch, J., Bessell, T., Rutten, M., Baldwin, J., **Jah, M.**, Hill, K., (2017). Joint Probabilistic Data Association and Smoothing Applied to Multiple Space Object Tracking. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-15. <http://arc.aiaa.org/doi/abs/10.2514/1.G002230>
5. Holzinger, M., and **Jah, M.**, (2018). Challenges and Potential in Space Domain Awareness. *Journal of Guidance, Control, and Dynamics*, Vol. 41, No. 1, pp. 15-18. <https://doi.org/10.2514/1.G003483>
6. **Mallik, V.**, **Jah, M.K.**, (2018). Reconciling Space Object Observed and Solar Pressure Albedo-Areas Via Astrometric and Photometric Data Fusion. *Elsevier Advances in Space Research*, Vol. 63, Issue 1, pp 404-416. <https://doi.org/10.1016/j.asr.2018.08.005>
7. **Delande, E.**, Houssineau, J., **Jah, M.**, (2018) Physics and Human-Based Information Fusion for Improved Resident Space Object Tracking. *Elsevier Advances in Space Research*, Vol. 62, Issue 7, pp 1800-1812. <https://doi.org/10.1016/j.asr.2018.06.033>
8. Kelecy, T., Lambert, E., Sunderland, B., Stauch, J., **Mallik, V.**, **Jah, M.**, (2019). Automated near real-time validation and exploitation of optical sensor data for improved orbital safety, *Acta Astronautica*. <https://doi.org/10.1016/j.actaastro.2018.12.043>
9. Do, H., Chin, T., Moretti, N. **Jah, M.**, & Tetlow, M. (2019). Robust Computer Vision Algorithms for GEO Object Detection, *Elsevier Advances in Space Research*, Vol. 64, Issue 3, pp 733-746. <https://doi.org/10.1016/j.asr.2019.03.008>
10. **Delande, E.**, Houssineau, J., Franco, J., Frueh, C., Clark, D., **Jah, M.** (2019). A New Multi-Target Tracking Algorithm for a Large Number of Orbiting Objects. *Elsevier Advances in Space Research*, Vol. 64, Issue 3, pp 645-667. <https://doi.org/10.1016/j.asr.2019.04.012>
11. **Kucharski, D.**, Kirchner, G., Otsubo, T., Kunimori, H., **Jah, M.**, Koidl, F., Bennett, J., Lim, H-C., Wang, P., Steindorfer, M., Sosnica, K. (2019). Hypertemporal Photometric Measurement of Spaceborne Mirrors Specular Reflectivity for Laser Time Transfer Link Model, *Elsevier Advances in Space Research*, <https://doi.org/10.1016/j.asr.2019.05.030>

12. Skinner, M., **Jah, M.**, McKnight, D., **Howard, D.**, Mukrami, D., Kai-Uwe, S. (2019). Results of the International Association for the Advancement of Space Safety Space Traffic Management Working Group, *Elsevier Journal of Space Safety Engineering*, <https://doi.org/10.1016/j.jsse.2019.05.002>
13. **Kucharski, D.**, Kirchner, G., Otsubo, T., Flegel, S., Kunimori, H., **Jah, M.**, Koidl, F., Bennett, J., Steindorfer, M., Wang, P. (2020). Quanta Photogrammetry of Experimental Geodetic Satellite for remote detection of micrometeoroid and orbital debris impacts, *Acta Astronautica*, <https://doi.org/10.1016/j.actaastro.2020.04.042>
14. Le May, S., Carter, B., Gehly, S., Flegel, S., **Jah, M.** (2020). Representing and Querying Space Object Registration Data Using Graph Databases, *Acta Astronautica*, <https://doi.org/10.1016/j.actaastro.2020.04.056>
15. **Cai, H.**, Yang, Y., Gehly, S., He, C., **Jah, M.** (2020). Sensor tasking for search and catalog maintenance of geosynchronous space objects, *Acta Astronautica*, [Volume 175](https://doi.org/10.1016/j.actaastro.2020.05.063), October 2020, pp 234-248, <https://doi.org/10.1016/j.actaastro.2020.05.063>
16. **Cai, H.**, Hussein, I., **Jah, M.** (2020). Possibilistic Admissible Region Using Outer Probability Measure Theory, *Acta Astronautica*, [Volume 177](https://doi.org/10.1016/j.actaastro.2020.07.041), December 2020, pp 246-257, <https://doi.org/10.1016/j.actaastro.2020.07.041>
17. **Spurbeck, J.**, **Jah, M.**, **Kucharski, D.**, Bennett, J., Webb, J. (2021). Near Real Time Satellite Event Detection, Characterization, and Operational Assessment Via the Exploitation of Remote Photoacoustic Signatures, *AAS Journal of Astronautical Sciences*, <https://doi.org/10.1007/s40295-021-00252-5>
18. Palmroth, M., Tapio, J., Soucek, A., Perrels, A., **Jah, M.**, Lönnqvist, M., Nikulainen, M., Piauokaite, V., Seppälä, T., Virtanen, J. (2021). Toward Sustainable Use of Space: Economic, Technological, and Legal Perspectives, *Elsevier Journal of Space Policy*, Volume 57, 2021, <https://doi.org/10.1016/j.spacepol.2021.101428>
19. **Kucharski, D.**, Kirchner, G., **Jah, M.**, Bennett, J., Koidl, F., Steindorfer, M., Wang, P. (2021). Full attitude state reconstruction of tumbling space debris TOPEX/Poseidon via light-curve inversion with Quanta Photogrammetry, *Acta Astronautica*, <https://doi.org/10.1016/j.actaastro.2021.06.032>
20. Zucchelli, E.M., Delande, E.D., Jones, B.A., **Jah, M.K.** (2021). Multi-Fidelity Orbit Determination with Systematic Errors. *J Astronaut Sci* 68, 695–727. <https://doi.org/10.1007/s40295-021-00267-y>

Refereed Conference Proceedings

1. **Jah, M.K.**, (1998). *Simulated Lunar Design and Modeling Assisted by Satellite Tool Kit (STK)*, 6th International Conference and Exposition on Engineering, Construction, and Operations in Space, held in Albuquerque, NM, April 26-30.
2. **Jah, M.K.**, Potterveld, C., Rustick, J., Madler, R. (1999). *Use of Lunar Gravity Assists for Earth Orbit Plane Changes*, Part I, *Advances in the Astronautical Sciences*, Vol. 102, pp. 95-107, Univelt, San Diego. AAS Paper 99-107.
3. Ely, T. A., Anderson, R., Bar-Sever, Y. E., Bell, D., Guinn, J., **Jah, M.**, Kallemeyn, P., Levene, E., Romans, L., Wu, S., (1999). *Mars Network Constellation Design Drivers and Strategies*, Paper AAS 99-301, AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska, August 16-19.

4. Halsell, C. A., Bowes, A. L., Johnston, M. D., Lyons, D. T., Lock, R. E., Xaypraseuth, P., Bhaskaran, S. K., Highsmith, D. E., **Jah, M. K.** (2003). *Trajectory Design for the Mars Reconnaissance Orbiter Mission*, Part III, Advances in the Astronautical Sciences, Vol. 114, pp. 1591-1607, Univelt, San Diego. AAS Paper 03-211.
5. Bowes, A. L., Halsell, C. A., Johnston, M. D., Lyons, D. T., Lock, R. E., Xaypraseuth, P., Bhaskaran, S. K., Highsmith, D. E., **Jah, M. K.** (2003). *Primary Science Orbit Design for the Mars Reconnaissance Orbiter Mission*, Part III, Advances in the Astronautical Sciences, Vol. 114, pp. 1607-1625, Univelt, San Diego. AAS Paper 03-212.
6. **Jah, M.K.**, Lisano, M.E. II (2004). *6-DOF Aerobraking Trajectory Reconstruction by use of Inertial Measurement Unit (IMU) Data for the Improvement of Aerobraking Navigation*, Part II, Advances in the Astronautical Sciences, Vol. 119, pp. 1733-1753, Univelt, San Diego. AAS Paper 04-214.
7. Lock, R., Xaypraseuth, P., Halsell, C. A., Bowes, A. L., Johnston, M. D., Lyons, D., Highsmith, D. E., **Jah, M. K.**, You, T. (2004). *The Mars Reconnaissance Orbiter Mission Plan*, Part III, Advances in the Astronautical Sciences, Vol. 119, pp. 2629-2649, Univelt, San Diego. AAS Paper 04-269.
8. Highsmith, D. E., Konopliv, A. S., Han, D., **Jah, M. K.**, Craig, D. E. (2004). *Mars Atmospheric Variability Above 250 km Altitude*, 18th International Symposium on Space Flight Dynamics, Germany, Munich, October 11-15.
9. Highsmith, D. E., Konopliv, A. S., Han, D., **Jah, M. K.**, Craig, D. E. (2004). *Mars Express Interplanetary Navigation From Launch To Mars Orbit Insertion: The JPL Experience*, 18th International Symposium on Space Flight Dynamics, Germany, Munich, October 11-15.
10. You, T., Halsell, A., Highsmith, D., **Jah, M.**, Graat, G., Demcak, S., Higa, E., Long, S., Bhaskaran, S., (2004). *Mars Reconnaissance Orbiter Navigation*, AIAA/AAS Astrodynamics Specialist Conference and Exhibit, Providence, Rhode Island, August 16-19.
11. Highsmith, D. E., You, T., Halsell, A., **Jah, M.**, Demcak, S., Higa, E., Long, S. (2005). *Atmosphere Variability at Mars Reconnaissance Orbiter Science Orbit Altitudes Based On Mars Express Reconstructions*, Part II, Advances in the Astronautical Sciences, Vol. 120, pp. 1767-1787, Univelt, San Diego. AAS Paper 05-215.
12. Mottinger, N., You, T., Halsell, A., Highsmith, D., **Jah, M.**, Graat, G., Demcak, S., Higa, E., Long, S., Bhat, R. (2006). *Launch Navigation Support for Mars Reconnaissance Orbiter*, Part II, Advances in the Astronautical Sciences, Vol. 124, pp. 1887-1909, Univelt, San Diego. AAS Paper 06-220.
13. **Jah, M.**, Madler, R., (2007). *Satellite Characterization: Angles and Light Curve Data Fusion for Spacecraft State and Parameter Estimation*. Air Force Maui Optical and Supercomputing Site (AMOS) 2007 Conference, Wailea, Maui, Hawaii, September.
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21. Kececy, T., **Jah, M.**, (2009). *Analysis of Orbital Prediction Accuracy Improvements Using High Fidelity Physical Solar Radiation Pressure Models for Tracking High Area-to-Mass Ratio Objects*. 5th European Space Debris Conference, Darmstadt, Germany, March 30 – April 2.
22. Giza, D., Singla, P., **Jah, M.**, (2010). *An Adaptive Gaussian Sum Filtering Approach for Orbit Uncertainty Estimation*, Part I, Advances in the Astronautical Sciences, Vol. 136, pp. 475-488, Univelt, San Diego. AAS Paper 10-132.
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26. Hill, K., Sydney, Hamada, K., Cortez, R., Luu, K., Schumacher, P., Jr., **Jah, M.**, (2010). *Covariance-based Scheduling of a Network of Optical Sensors*, Advances in the Astronautical Sciences, Vol. 139, pp. 393-406, Univelt, San Diego. AAS Paper 10-325.
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28. DeMars, K., Bishop, R., **Jah, M.**, (2011). *A Splitting Gaussian Mixture Method for the Propagation of Uncertainty in Orbital Mechanics*, Advances in the Astronautical Sciences, Vol. 140, pp. 1419-1438, Univelt, San Diego. AAS Paper 11-201.
29. DeMars, K., Bishop, R., **Jah, M.**, (2011). *Space Object Tracking in the Presence of Attitude-Dependent Solar Radiation Pressure Effects*, AAS Paper 11-582, 2011 AIAA/AAS Astrodynamics Specialists Conference, Girdwood, AK, July 31 – August 4 .

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31. Vallado, D., Kececy, T., **M. Jah**, (2012). “*Data Integrity in Orbital Data Fusion*,” 63rd International Astronautical Congress. Naples, Italy: International Astronautical Federation, September.
32. Früh, C. Kececy T. and **Jah, M.**, (2012). *Attitude Dynamics Simulation of MLI Space Debris Objects in Geosynchronous Earth Orbit*, Proc. AIAA/AAS Astrodynamics Specialists Conference, Minneapolis, MN, August.
33. DeMars, K., Hussein, I., **Jah, M.**, Erwin, R.S., (2012). *The Cauchy-Schwarz Divergence for Assessing Situational Information Gain*, 15th International Conference on Information Fusion, Singapore, Singapore, July 9 – July 14.
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39. C. Früh, D. Ferguson, C. Lin, T. Kececy, F. Leve, **M. Jah**, (2013). “*The effect of passive electrostatic charging on near-geosynchronous high area to mass ratio objects*,” Proceedings of the International Astronautical Congress.
40. C. Früh, **M. Jah**, (2013). “*Detection Probability of Earth Orbiting Objects Using Optical Sensors in Different Observation Scenarios*,” Proc. AIAA/AAS Astrodynamics Specialists Conference, Hilton Head, August.
41. C. Früh, **M. Jah**, E. Valdez, T. Kececy, P. Kervin, (2013). “*Initial Taxonomy and Classification Scheme for Artificial Space Objects*,” Proceedings of the 2013 AMOS Technical Conference, Maui, Hawaii.
42. C. Früh, **M. Jah**, (2013). “*Attitude and Orbit Propagation of High Area-to-Mass Ratio (HAMR) Objects using a Semi-Coupled Approach*,” Proc. AAS Space Flight Mechanics Conference, Kauai, HI, February 2013.
43. C. Früh, **M. Jah**, (2013). “*Coupled Orbit-Attitude Motion of High Area-to-Mass Ratio (HAMR) Objects including Self-Shadowing*,” Proc. AAS Space Flight Mechanics Conference, Kauai, HI, February 2013.
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47. Kececy, T., **M. Jah**, P. Sydney and P. Kervin, (2013). “*Analysis of Pan-STARRS Photometric and Astrometric Data for Data Association and Physical Consistency Assessment*,” 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
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49. Früh, C., T. Schildknecht, **M. Jah**, T. Kececy, P. Kervin, D. Hall and E. Valdez, (2013). “*Development of an Initial Taxonomy and Classification Scheme for Artificial Space Objects*,” 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
50. D. Koblick, M. Klug, A. Goldsmith, B. Flewelling, **M. Jah**, J. Shanks, R. Piña, (2014). “*Ground Optical Signal Processing Architecture for Contributing SSA Space Based Sensor Data*” Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
51. C. Wetterer, R. Hunt, P. Kervin, **M. Jah**, (2014). “*Comparison of Unscented Kalman Filter and Unscented Schmidt Kalman Filter in Predicting Attitude and Associated Uncertainty of a Geosynchronous Satellite*,” Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
52. C. Wetterer, K. Hill, **M. Jah**, (2014). “*Comparison of Radiation Pressure Perturbations on Rocket Bodies and Debris at Geosynchronous Earth Orbit*,” Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
53. M. Wilkins, P. Schumacher, **M. Jah**, (2014). “*Implications of Hierarchies for RSO Recognition, Identification, and Characterization*,” AIAA/AAS Astrodynamics Specialist Conference, San Diego, CA, August, AIAA 2014-4369.
54. J. Stauch, **M. Jah**, J. Baldwin, T. Kececy, K. Hill, (2014). “*Mutual Application of Joint Probabilistic Data Association, Filtering, and Smoothing Techniques for Robust Multiple Space Object Tracking*,” Invited, AIAA/AAS Astrodynamics Specialist Conference, San Diego, CA, August, AIAA 2014-4365.
55. R. Wiesman, **M. Jah**, (2014). “*Uncertainty Quantification for Angles-Only Initial Orbit Determination*,” AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-434.
56. C. Früh, D. Ferguson, C. Lin, **M. Jah**, (2014). “*Passive Electrostatic Charging of Near-Geosynchronous Space Debris HAMR Objects and Its Effects on the Coupled Object Dynamics*” AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-428.
57. K. Hill, C. Wetterer, **M. Jah**, (2014). “*Comparison of Gravitational, Third-Body, and Radiation Pressure Perturbations in Orbit Propagation*” AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-396.
58. R. Linares, J. Crassidis, **M. Jah**, (2014). “*Particle Filtering Light Curve Based Attitude Estimation for Non-Resolved Space Objects*” AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-210.

59. Hussein, Z. Sunberg, S. Chakravorty, **M. Jah.**, R. Erwin, (2014). "*Stochastic Optimization for Sensor Allocation Using AEGIS-FISST*" AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-209.
60. Cheng, Y., DeMars, K. J., Früh, C., and **Jah, M. K.**, (2014). "*Gaussian Mixture PHD Filter for Space Object Tracking*," AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 10-14.
61. **M. Jah.**, (2015). "*Astrodynamics Collaborative Environment: A Step Toward Data Sharing and Collaboration Via the Air Force Research Laboratory*," 25th AAS/AIAA Space Flight Mechanics Meeting, Williamsburg, VA, January, AAS 15-449.
62. J. Kent, I. Hussein, **M. Jah**, (2016). "*Directional Distributions In Tracking of Space Debris*," 19th International Conference on Information Fusion, Heidelberg, Germany, July.
63. R. Furfaro, D. Gaylor, R. Linares, **M. Jah**, R. Walls, (2016). "*Resident Space Object Characterization and Behavior Understanding via Machine Learning and Ontology-based Bayesian Networks*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2016 Conference, Wailea, Maui, Hawaii, September.
64. R. Walls, D. Gaylor, V. Reddy, R. Furfaro, **M. Jah**, (2016). "*Assessing the IADC Space Debris Mitigation Guidelines: A Case for Ontology-based Data Mangement*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2016 Conference, Wailea, Maui, Hawaii, September.
65. A. Jaunzemis, M. Holzinger, **M. Jah**, (2016). "*Evidence-based Sensor Tasking for Space Domain Awareness*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2016 Conference, Wailea, Maui, Hawaii, September.
66. D. Slater, R. Ridenoure, D. Klumpar, J. Carrico, **M. Jah**, (2016) "*Light to Sound: The Remote Acoustic Sensing Satellite (RASSat)*," AIAA/USU Small Satellite Conference, Logan, UT July, SSC 16-X1-05.
67. Furfaro, R., R. Linares, **M.K. Jah**, and D. Gaylor, (2016) "*Mapping Sensors Measurements to Resident Space Objects Energy and State Parameters Space via Extreme Learning Machines*," In *Proceedings of the International Astronautical Congress, IAC*.
68. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Orbital Error Propagation Analysis Using Directional Statistics for Space Objects*," In *Advances in the Astronautical Sciences*. Vol. 160.
69. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Angles-Only Data Association Using Directional Discriminant Analysis*," In *Advances in the Astronautical Sciences*. Vol. 160.
70. Bhattacharjee, S., Kent, J.T., I.I. Hussein, W. Faber, and **Jah, M.**, (2017) "*FBK Optical Data Association in a Multiple Hypothesis Framework with Maneuvers*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2017 Conference, Wailea, Maui, Hawaii, September.
71. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Geometric Restructurization of the Space Object Tracking Problem for Improved Uncertainty Representation*," 7th European Conference on Space Debris, Darmstadt, Germany.
72. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Bayesian Filtering Using Directonal Statistics for the Space Debris Tracking Problem*," 68th International Astronautical Congress. Adelaide, Australia: International Astronautical Federation, October.

73. Kent, J. T, Bhattacharjee, S., Hussein, I., Faber, W., **Jah, M.**, (2018) “*Fisher-Bingham-Kent Mixture Models for Angles-Only Observation Processing* “ 28th AAS/AIAA Space Flight Mechanics Meeting, Kissimmee, FL, January.
74. Kent, J. T, Bhattacharjee, S., Hussein, I., Faber, W., **Jah, M.**, (2018) “*Optical Data Processing Using Directional Statistics In a Multiple Hypothesis Framework With Maneuvering Objects*“ 28th AAS/AIAA Space Flight Mechanics Meeting, Kissimmee, FL, January.
75. Kent, J. T, Bhattacharjee, S., Hussein, I., Faber, W., **Jah, M.**, (2018) “*Nonlinear Filtering Using Directional Statistics for the Orbital Tracking Problem with Perturbation Effects*“ 28th AAS/AIAA Space Flight Mechanics Meeting, Kissimmee, FL, January.
76. Kent, J. T, Bhattacharjee, S., Hussein, I., Faber, W., **Jah, M.**, (2018) “*Filtering when object custody is ambiguous*“ 21st International Conference on Information Fusion, Cambridge, UK July.
77. Spurbeck, J., **Jah, M.**, Kucharski, D., Bennett, J., Webb, J. (2018). “*Satellite Characterization, Classification, and Operational Assessment Via the Exploitation of Remote Photoacoustic Signatures*” Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2018 Conference, Wailea, Maui, Hawaii, September.
78. Iyer, S., **Jah, M.**, Hussein, I., McNeely, D., (2019). “*Context-Based Non-Compliance for GEO Satellite Reorbiting*” AAS 19-433, 29th AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, January.
79. Delande, E., **Jah, M.**, Jones, B., (2019). “*A New Representation of Uncertainty for Collision Assessment*” AAS 19-452, 29th AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, January.
80. Bever, M., Delande, E., **Jah, M.** (2019). “*Outer Probability Measures for First and Second Order Uncertainty in the Space Domain*” IAA-AAS SciTech-040, Moscow, Russia June.
81. Iyer, S., **Jah, M.** (2020) “*Orbit Determination from Recurrent Neural Network Modeling of Simulated Optical Measurements*” IAA-UT-STM-04-05, IAA/UT Space Traffic Management Conference, Austin, TX, February
82. Esteva, M., Xu, W., Simone, N., Gupta, A., **Jah, M.**, (2020) “*Modeling Data Curation to Scientific Inquiry: A Case for Multimodal Data Integration*” Proceedings of the 2020 IEEE Joint Conference on Digital Libraries (JCDL2020), Xi’an, China, August 1 – 5
<https://doi.org/10.1145/3383583.3398539>
83. Crowley, J., Mackey, I., Stuart, J., Alper Ramaswamy, B., and **Jah, M.** (2020), “*Improving Navigation Analysis With OD-D: The Visually Interactive Orbit Determination,*” AAS 20-544, 2020 AAS/AIAA Astrodynamics Specialist Virtual Conference, Lake Tahoe, CA, August.

Book/Chapters (Authored/Co-Authored, Edited/Co-Edited)

1. Space India 2.0, Chapter on Space Situational Awareness (2016)
https://www.orfonline.org/wp-content/uploads/2017/02/Space2.0_Final_23Feb.pdf
2. Space Domain Awareness, Space Technology Series, McGraw Hill (2017-Present)
3. Jah M. (2020) Space Object Behavior Quantification and Assessment for Space Security. In: Schrogl KU. (eds) Handbook of Space Security. Springer, Cham
https://doi.org/10.1007/978-3-030-22786-9_103-1

Notable Position Papers, Reports, and Congressional Testimonies

1. O. Brown, T. Cottom, M. Gleason, M. Hallex, A. Long, E. Rivera, D. Finkleman, T. Hitchens, **M. Jah**, D. Koplow, R. Sedwick, (2016). “*Report on Space Traffic Management Assessments, Frameworks, and Recommendations*,” In Reply To: Public Law No. 114-90, “U.S. Commercial Space Launch Competitiveness Act” Title I, “Spurring Private Aerospace Competitiveness and Entrepreneurship” Section 109, “Orbital Traffic Management”, 21 November.
2. **M. Jah**, Congressional Witness, invited by U.S. Senator Ted Cruz (R-Texas), chairman of the Subcommittee on Space, Science, and Competitiveness, to provide testimony at the [Reopening the American Frontier: Promoting Partnerships Between Commercial Space and the U.S. Government to Advance Exploration and Settlement](#), 13 July 2017
3. **M. Jah**, D. Greiman, M. Sengupta, S. Magnus, P. Melroy, S. Helms, M. Brown, “*Space Traffic Management (STM): Balancing Safety, Innovation, and Growth; A Framework for a Comprehensive Space Traffic Management System*,” An Institute Position Paper, The American Institute of Aeronautics and Astronautics, October 2017
4. S. Pagano, with input from **M. Jah et al.**, “*Taking Up (Outer) Space: An Exploration of Definitional Issues: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017
5. B. Bragg, with input from **M. Jah et al.**, “*Use of the Commercial Space Industry for Military Purposes by Non-Western States: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017
6. A. Astorino-Courtois, with input from **M. Jah et al.**, “*Space and US Deterrence: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017
7. A. Astorino-Courtois, with input from **M. Jah et al.**, “*Contested Space Operations; A Strategic Multilayer Assessment: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), November 2017
8. J. Stevenson, with input from **M. Jah et al.**, “*Effectiveness of International Agreements in Space: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), February 2018
9. A. Astorino-Courtois, B. Bragg, with input from **M. Jah et al.**, “*Commercial Space Actors: Disruptors or Solid Partners for National Security: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), February 2018
10. J. Stevenson, with input from **M. Jah et al.**, “*Principles of Response to Aggression in Space: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), February 2018
11. N. Peterson, with input from **M. Jah et al.**, “*Commercial Companies’ Perceptions of Security in Space: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), March 2018
12. B. Bragg, with input from **M. Jah et al.**, “*Allocation of Commercial Space Industry Components: A Virtual Think Tank Report*,” Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), April 2018

13. J. Stevenson, with input from **M. Jah et al.**, “*Effects of Investment on Pathways to Space Security: A Virtual Think Tank Report*,” Produced by NSI in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), April 2018
14. **M. Jah**, Congressional Witness, invited by U.S. Senator Roger Wicker (R-Miss.), chairman of the Committee on Commerce, Science, and Transportation, to provide testimony at the [Space Missions of Global Importance: Planetary Defense, Space Weather Protection, and Space Situational Awareness](#), 12 February 2020
15. **M. Jah et al.**, “*Technical Considerations for Enabling NATO-Centric Space Domain Common Operating Picture*,” NATO STO Technical Report STO-TR-SCI-279 (2020) [https://www.sto.nato.int/publications/STO%20Technical%20Reports/STO-TR-SCI-279/\\$\\$TR-SCI-279-ALL.pdf](https://www.sto.nato.int/publications/STO%20Technical%20Reports/STO-TR-SCI-279/$$TR-SCI-279-ALL.pdf)
16. Walker, C. (NSF’s NOIRLab), Hall, J. (Lowell Observatory), Allen, L. (NSF’s NOIRLab), Green, R. (U. Arizona), Seitzer, P. (U. Michigan), Tyson, A. (UC Davis/Rubin Observatory), Bauer, A. (Vera C. Rubin Observatory), Krafton, K. (AAS), Lowenthal, J. (Smith College), Parriott, J. (AAS), Puxley, P. (AURA), Abbott, T. (NSF’s NOIRLab), Bakos, G. (Princeton University), Barentine, J. (IDA), Bassa, C. (ASTRON), Blakeslee, J. (Gemini Observatory/NSF’s NOIRLab), Bradshaw, A. (SLAC), Cooke, J. (Swinburne University), Devost, D. (Canada-France-Hawai’i Telescope), Galadí, D. (Icosaedro working group of the Spanish Astronomical Society), Haase, F. (NSF’s NOIRLab), Hainaut, O. (ESO), Heathcote, S. (NSF’s NOIRLab), **Jah, M.** (University of Texas at Austin), Krantz, H. (U. Arizona), Kucharski, D. (University of Texas at Austin), McDowell, J. (CfA), Mróz, P. (Caltech), Otarola, A. (ESO, TMT), Pearce, E. (U. Arizona), Rawls, M. (U. Washington/Rubin Observatory), Saunders, C. (Princeton University), Seaman, R. (Catalina Sky Survey), Siminski, J. (ESA Space Debris Office), Snyder, A. (Stanford University), Storrie-Lombardi, L. (Las Cumbres Observatory), Tregloan-Reed, J. (U. Antofagasta), Wainscoat, R. (U. Hawai’i), Williams, A. (ESO) and Yoachim, P. (U. Washington/Rubin Observatory) Appendix B and C “*Impact of Satellite Constellations on Optical Astronomy and Recommendations Toward Mitigations*” <https://aas.org/sites/default/files/2020-08/SATCON1-Report.pdf> and https://aas.org/sites/default/files/2020-08/SATCON1-WG-Tech-Reports_0.pdf

INVITED TALKS/LECTURES:

1. NASA Jet Propulsion Laboratory. November 2007. *Air Force Maui Optical and Supercomputing Site (AMOS)*
2. 19th AAS/AIAA Space Flight Mechanics Meeting, Savannah, GA. February 2009. *Advanced Sciences & Technology Research Institute for Astrodynamics (ASTRIA)*
3. Liceo Militar Pedro Ma. Ochoa Morales, Los Teques, Venezuela. June 2009. *Introduction to Astrodynamics and Orbit Determination*
4. Universidad Simon Bolivar, Caracas, Venezuela. June 2009. *Introduction to Astrodynamics and Orbit Determination*
5. 1st TechHui Conference, O’ahu, Hawai’i. Keynote Speaker. July 2009. *Astrodynamics and the Maui Space Surveillance Systems Branch*
6. University of Bern, Bern, Switzerland. September 2009. *Orbit Determination Performance for High Area-to-Mass Ratio Space Object Tracking Using an Adaptive Gaussian Mixtures Estimation Algorithm*

7. University College London, London, Great Britain. October 2009. *Orbit Determination Performance for High Area-to-Mass Ratio Space Object Tracking Using an Adaptive Gaussian Mixtures Estimation Algorithm*
8. 2011 European Geophysics Union Meeting, Vienna, Austria. May 2011. *Improved Methods for Tracking and Characterizing Inactive Resident Space Objects*
9. 28th International Symposium for Space Sciences and Technology, Okinawa, Japan. June 2011. *Special Panel on Space Debris*
10. 2011 Students for the Exploration and Development of Space (SEDS) conference, Boulder, CO Oct 2011. *Special Panel on Space Debris*
11. 39th COSPAR Scientific Assembly, Mysore, India. July 2012. US Keynote Speaker. *Special Panel on Space Situational Awareness*
12. 2012 AIAA GNC/Astrodynamics Conference, Minneapolis, MN Aug 2012. *Special Panel on Space Situational Awareness*
13. 1st Australian Space Situational Awareness Meeting, Canberra, Australia Apr 2013. US Keynote Speaker
14. 24th AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM Jan 2014. *Special Panel on Air Force Space Command's Astrodynamics Innovation Committee*
15. 2nd IAA Conference on Dynamics and Control of Space Systems, Rome, Italy Mar 2014. *Special Panel on Astrodynamics Needs in Space Situational Awareness and the Air Force Space Command's Astrodynamics Innovation Committee*
16. 2nd Australian Space Situational Awareness Meeting, Canberra, Australia Jun 2014. US Keynote Speaker
17. AIAA Space 2014, San Diego, CA Aug 2014. *Mutual Application of Joint Probabilistic Data Association, Filtering, and Smoothing Techniques for Robust Multiple Space Object Tracking* Co-authors: J. Stauch, J. Baldwin, T. Kelecy, K. Hill
18. TEDxABQ Salon, Albuquerque, NM Aug 2014. *Space Junk: The Unknown Orbital Iceberg Equivalent*
19. Space Situational Awareness 2014, London, UK, Nov. *US Representative Panelist*
20. Space Security, Wilton Park, West Sussex, UK, Mar 2015. US Space Situational Awareness technical expert
21. Space Situational Awareness 2015, Maryland, May. *Chair, Keynote Speaker, and Panelist*
22. 3rd Australian Space Situational Awareness Meeting, Canberra, Australia Sep 2015. US Keynote Speaker
23. 1st Air Force Research Laboratory (AFRL) Inspire talks, Dayton OH Oct 2015. *Space Junk: The Unknown Orbital Iceberg Equivalent*
24. Institute for Defense Analyses, Science and Technology Policy Institute: Invited lecture on Space Object Behavioral Sciences and Applications to Space Situational Awareness and Space Traffic Monitoring, Jan 2016
25. Martin Luther King Day Invited Speaker: Army Research Laboratory, Adelphi MD, Jan 2016
26. Embry-Riddle Aeronautical University Honors Lecture, Prescott, AZ. Mar 2016
27. 32nd Space Symposium Panelist on Congestion in Space, Colorado Springs CO, Apr 2016
28. Defense Strategies Institute (DSI) 2nd Annual Space Resiliency Summit, Alexandria VA, June 2016. Keynote Speaker
29. NATO SCI-292-LS Lecture Series, Lead Lecturer, Ankara (Turkey), Rome (Italy), Munich (Germany), and Washington D.C.(USA), June-July 2016. *Space Domain Awareness*

30. 2nd Space Technology and Investment Forum, San Francisco CA, July 2016. Keynote Speaker
31. NPR Arizona Science: *Episode 48 Rules of the Road are Needed in Outer Space*, <https://radio.azpm.org/arizonascience/>, Sep 2016
32. Space Advocates Seminar, US. House Science Committee, Washington, D.C., Oct 2016. *The Role of Academia in Space Situational Awareness and Global Space Traffic Management*
33. International Symposium for Personal and Commercial Spaceflight, Las Cruces NM, Oct 2016. Keynote Speaker
34. TEDxDayton, Dayton, OH, Oct 2016. *Space Traffic and Avoiding the Tragedy of the Commons*
35. The Space Show, <http://thespaceshow.com/show/18-oct-2016/broadcast-2796-dr.-moriba-jah>, Oct 2016
36. University of Texas at Austin, Aerospace Engineering and Engineering Mechanics Department, 28 Oct 2016. *Space Traffic Management and the Tragedy of the Commons*
37. University of Colorado at Boulder, Aerospace Engineering Sciences Department, 2 Feb 2017. *Adaptive Entropy-based Gaussian-mixture Information Synthesis for Improved Space Situational Awareness*
38. 3rd ORF Kalpana Chawla Space Dialogue, 15-18 Feb 2017, New Delhi, India. Invited Speaker and Panelist
39. Future In-Space Operations (FISO) seminar, 1 Mar 2017. *Space Traffic and the Tragedy of the Commons*. <http://spirit.as.utexas.edu/%7Efiso/telecon.htm>
40. World Space Risk Forum, Panel on Space Debris Challenges and Dangers, 15 June 2017, London, UK. Keynote Speaker
41. 29th International Summer Symposium on Science and World Affairs, Union of Concerned Scientists, 24-31 July 2017, Technical University of Darmstadt, Germany
42. 15th Reinventing Space Conference, Glasgow Scotland, Oct 24-26 2017, Keynote Speaker
43. 1st International Academy of Astronautics (IAA) Conference on Space Situational Awareness, Orlando FL, Nov 2017, Keynote Speaker.
44. Challenges in Space Traffic Management and Situational Awareness, Virginia Tech, March 9, 2018.
45. 1st Indian Workshop on Space Situational Awareness, New Delhi, June 2018, Keynote Speaker.
46. Astrodynamics Challenges for Space Situational Awareness, Space Advocates, U.S. Congressional Staff, June 2018.
47. Space Surveillance and Tracking Short Course, Shanghai Jiao Tong University, Aerospace Engineering, June 2018.
48. Space Surveillance and Tracking Short Course, Beijing Institute of Technology, Aerospace Engineering, June 2018.
49. Advanced Space Object Tracking Methods, Chinese Academy of Sciences, National Astronomical Observatories, Beijing, China, July 2018.
50. 4th Australian and New Zealand Workshop on Space Situational Awareness, UNSW/ADFA, Canberra, Australia, July 2018, Keynote Speaker.
51. 3rd Global Space Traffic Management workshop, Edinburgh, Scotland, Keynote Speaker, August 2018.
52. Space Debris Workshop, International Workshop for Laser Ranging, Canberra, Australia, Keynote Speaker, November 2018.

53. Invited Panelist, Outer Space Institute inaugural conference and meeting, University of British Columbia, Vancouver, B.C Canada, November 2018.
54. The Journey of an Astrodynamist, McCallum High School, Austin, TX, November 2018.
55. The Journey of an Astrodynamist, Cedar Creek High School, Houston, TX, December 2018.
56. The Journey of an Astrodynamist, National Society of Black Engineers, The University of Austin, Austin, TX, December 2018.
57. 2018 Eilene Galloway Symposium, Keynote Speaker and Panelist, Washington D.C., December 2018.
58. The Journey of an Astrodynamist, Molokai High School, Molokai, HI, January 2019.
59. 1st Finnish Space Sustainability Workshop, Aalto University, Espoo, Finland, February 2019, Keynote Speaker.
60. United Nations Committee On Peaceful Uses of Outer Space, Scientific and Technical Subcommittee meetings, *AIAA Member Contributions to the Long Term Sustainability of Space*, Vienna, Austria, AIAA Representative Speaker on the United States Delegation to the United Nations, February 2019.
61. Invited Seminar Lecture, Stanford University, Aerospace Engineering Department, February 2019. *Advanced Methods of Resident Space Object Characterization and Uncertainty Quantification*.
62. Invited Seminar Lecture, Texas A&M University, Aerospace Engineering Department, February 2019. *Advanced Methods of Resident Space Object Characterization and Uncertainty Quantification*.
63. Invited Seminar Lecture, Georgia Institute of Technology, Aerospace Engineering Department, March 2019. *Advanced Methods of Resident Space Object Characterization and Uncertainty Quantification*.
64. TEDxUTAustin, Austin, TX, April 2019. *ASTRIAGraph: Space Traffic Monitoring at UT Austin*.
65. Salt Spring Forum, Salt Spring Island, B.C., April 2019. *The Journey of an Astrodynamist: Science, Space Junk, and Environmentalism on the Final Frontier*.
66. TED, Vancouver, B.C., April 2019. *ASTRIAGraph: Towards a Crowdsourced Space Traffic Monitoring System*.
67. United Nations Disarmament Institute (UNIDIR), 2019 Space Security Conference, Geneva, Switzerland, May 2019. *ASTRIAGraph: Space Traffic Monitoring at UT Austin*.
68. US-Japan Conference on Cultural and Educational Interchange (CULCON), Beyond 2020: Paving the Way for the Next Generation and U.S.-Japan Collaboration, Speaker and Panelist, Austin, TX, June 2019. *US-Japan Areas for Scientific Collaboration Regarding Space Situational Awareness and Space Sustainability*.
69. The Journey of an Astrodynamist, Huston-Tillotson University Elementary School Summer Program, Austin, TX, June 2019.
70. Invited Highlight Lecture, 2nd IAA/AAS SciTech Forum, Moscow, Russia, June 26-29 2019. *Advances in Space Object Characterization and Uncertainty Quantification for Space Situational Awareness*.
71. Space Traffic Management Workshop, Royal United Services Institute (RUSI), London, UK, July 2019, Keynote Speaker.
72. 10th International Workshop on Satellite Constellations and Formation Flying, Glasgow, Scotland, July 2019, Keynote Speaker.

73. ArmadilloCon 41, Austin, Texas, August 2019, The Science Guest.
74. 70th International Astronautical Congress, Washington DC, October 2019, Invited Panelist. *Artificial Intelligence in Space.*
75. 70th International Astronautical Congress, Washington DC, October 2019, Moderator. *Space Traffic Management.*
76. 70th International Astronautical Congress, Washington DC, October 2019, Invited Panelist. *34th IAA/IISL Scientific-Legal Roundtable “Mega-Constellations.”*
77. 2019 swissnexDay, EPFL, Lausanne, Switzerland, December 2019, Keynote Speaker.
78. Outer Space Institute Workshop on Space Debris, Salt Spring Island, BC, Canada, January 2020
79. DLD Conference, Munich, Germany, January 2020, Invited Panelist.
80. 2020 AAAS Meeting, Seattle, WA, February 2020, Invited Topical Lecture.
81. 2020 Arizona Space Grant Symposium, 30th NASA Space Grant Anniversary, April 2020, Keynote Speaker.
82. Co-creator of the AIAA ASCEND Space Traffic Management Diverse Dozen, October 2020.
83. Given COVID-19 and use of Zoom/Teams/etc., too many to list for the remainder of 2020.
84. Guest Lecture, “*Space Environmentalism,*” Warwick University and University of Oxford Aerospace Societies, January 2021.
85. Computational Astronautics Lecture, International Space University, January 2021.
86. Chair’s Distinguished Seminar Lecture, “*Traffic in Near-Earth Space: A wicked problem of a complex system requiring a transdisciplinary solution,*” University of Michigan Aerospace Engineering Department, January 2021.
87. Verification of 21st Century Arms Control Treaties, Space Security, Stanford University Guest Lecture, January 2021.
88. 2021 Data Harmony Update, Keynote, February 2021.
89. Guest Lecture, SPACE LAB at Morgan State University, February 2021.
90. 6th Japanese National Space Policy Secretariat Symposium on Ensuring the Safe and Sustainable Use of Outer Space, Invited Speaker, March 2021.
91. Global Explorers Summit (GLEXP2021), Lisbon, Portugal, July 2021, Invited Panelist.

RESEARCH TOPICS

Astrodynamics

Statistical Orbit Determination and Prediction

Space Situational Awareness

Space Traffic Management

Spacecraft Navigation

Multi-Source Information Fusion

Space Surveillance and Tracking

Orbital Safety

Long-Term Sustainability of Space Activities

GRANTS AND CONTRACTS

While in rank at The University of Texas at Austin: Total:\$5,898,761 (Jah’s Share: \$5,019,169)

1. "Development of a GEO Space Object Catalog," Air Force Research Laboratory via Applied Defense Solutions, \$159,974 (Jah's Share \$159,974), Mar 2017 – Mar 2018, Principal Investigator.
2. "Hallmark – Testbed," DARPA via Ball Aerospace, \$215,000 (Jah's Share \$215,000), Aug 2017 – Oct 2018, Principal Investigator.
3. "Spacecraft Navigation Independent Verification and Validation Analyses via JPL's Monte," NASA Jet Propulsion Laboratory, \$101,985 (Jah's Share \$101,985), Sep 2017 – Sep 2018, Principal Investigator.
4. "Space Object and Event Knowledge Graph for Space Traffic Management, Phase1" Federal Aviation Administration via NMSU, \$68,896 (Jah's Share \$68,896), Nov 2017 – May 2018, Principal Investigator.
5. "Space Domain Awareness Collaborative Research Infrastructure," Air Force Research Laboratory via the University of Arizona, \$589,884 (Jah's share \$196,628), Mar 2017 – Mar 2020, Principal Investigator (Co-Is Ryan Russell and Brandon Jones).
6. "Track Custody at GEO," Air Force Office of Scientific Research via University College London, \$67,268 (Jah's Share \$67,268), Jan 2020 – Jun 2020, Principal Investigator.
7. "Optical Express," Air Force Office of Scientific Research via Applied Space Solutions Ltd., \$45,000 (Jah's Share \$45,000), Feb 2018 – Feb 2019, Principal Investigator.
8. "AF17-CT02 Rapid Discovery of Evasive Satellite Behaviors," Air Force Research Laboratory via Applied Defense Solutions, \$45,000 (Jah's Share \$45,000), Apr 2018 – Jan 2019, Principal Investigator.
9. "AF17-CT02 Rapid Discovery of Evasive Satellite Behaviors," Air Force Research Laboratory via Data Fusion and Neural Networks LLC, \$50,000 (Jah's Share \$50,000), Apr 2018 – Jan 2019, Principal Investigator.
10. "Refinement and Validation of Radiation Pressure Models for High-Area-to-Mass-Ratio Objects for Improved Characterization, Tracking, and Orbit Prediction," Air Force Office of Scientific Research, \$616,336 (Jah's Share \$330,000; Co-I Renato Zanetti), Jun 2018 – Jun 2021, Principal Investigator.
11. "Deep Learning for Space Domain Awareness," Air Force Office of Scientific Research via Applied Space Solutions Ltd., \$200,000 (Jah's Share \$200,000), Apr 2018 – Jan 2020, Principal Investigator.
12. "Robust and Adaptive Machine Learning," Air Force Office of Scientific Research via Applied Defense Solutions, \$42,600 (Jah's Share \$42,600), Aug 2018 – April 2019, Principal Investigator.
13. "Improved Resident Space Object Tracking Via Advanced Estimation Methods," Tau Technologies, \$276,535 (Jah's Share \$276,535), Aug 2018 – Sep 2019, Principal Investigator.
14. "Harris Advanced Space Situational Awareness Research and Development," Harris Corp., \$445,000 (Jah's Share \$445,000), Dec 2018 – Dec 2021, Principal Investigator.
15. "Space Object Maneuver Definition and Quantification," Air Force Research Laboratory via CUBRC Inc., \$80,514 (Jah's Share \$80,514), Apr 2019 – Jun 2020, Principal Investigator.
16. "AF17-CT02 Rapid Discovery of Evasive Satellite Behaviors: Phase 2," Air Force Research Laboratory via Data Fusion and Neural Networks LLC, \$223,814 (Jah's Share \$223,814), Nov 2019 – Aug 2021, Principal Investigator.

17. "Tactical Space Domain Awareness for Advanced and Actionable Space BMC2," Lockheed Martin Corp., \$400,000 (Jah's Share \$400,000), Aug 2019 – Aug 2021, Principal Investigator.
18. "Space System Modeling," Lockheed Martin Corp – Missile Fire Control, \$92,289 (Jah's Share \$92,289), Jun 2020 – Aug 2021, Principal Investigator.
19. "Research Fellow at Oden Institute for Computational Engineering and Sciences," SERC: Space Environment Research Centre, \$80,000/year for Daniel Kucharski salary (all benefits included), June 2018 -March 2020, Research Fellow Supervisor.
20. "Robust Space Situational Awareness via Hard/Soft Information Fusion in the Presence of Epistemic Uncertainty," 2019 Moncrief Grand Challenge Faculty Award, Oden Institute for Computational Engineering and Sciences, \$41,315 (Jah's Share \$41,315), Spring 2020, Principal Investigator.
21. "Resident Space Object Tracking and Classification Using Methods in Geometric Statistics and Computational Topology," Air Force Office of Scientific Research, \$195,000 (Jah's Share \$195,000), Aug 2019 – Jul 2022, Principal Investigator.
22. "Space Object Gerontology," Air Force Office of Scientific Research, \$225,000 (Jah's Share \$225,000), Aug 2019 – Dec 2022, Principal Investigator.
23. "Transparency in Space Dashboard," Smith Richardson Foundation via Secure World Foundation, \$87,089 (Jah's Share \$87,089), Sep 2019 – Jan 2022, Principal Investigator.
24. "Space Data Prescriptive Analytics," Slingshot Aerospace, \$150,000 (Jah's share \$150,000), March 2020 – Feb 2023, Principal Investigator.
25. "Space Object and Event Knowledge Graph for Space Traffic Management, Phase1" Federal Aviation Administration via NMSU_Phase II, \$273,430 (Jah's Share \$273,430), Aug 2017 – Aug 2022, Principal Investigator.
26. "Ontology Derived Multi-Fidelity Space Object Catalog" Air Force Research Laboratory, \$65,000 (Jah'sShare \$65,000), Sep 2019 – Sep 2022, Co-PI.
27. "Quantification of Measurement Scheduling Effects on Orbit Determination Performance" DoD STTR via Orbit Logic Inc., \$61,832 (Jah's Share \$61,832), Aug 2020 – Aug 2021, Co-PI.
28. "Autonomous Onboard Angles-Only Orbit Determination" Ball Aerospace Corp., \$100,000 (Jah's Share \$100,000), Jan 2021 – Dec 2021, Co-PI.
29. "Patterns of Life Assessment for Space" DOD STTR via O-Analytics, \$150,000 (Jah's Share \$150,000), Mar 2021 - Jan 2022, Principal Investigator.
30. "ACCESSED - Autopilot Commander Conjunction-assessment Enabling a Starling and a System for Exchange and Deconfliction" NASA STTR via Emergent Space Technology, \$220,000 (Jah's Share \$220,000), Oct 2021 – Mar 2023, Principal Investigator.
31. "Civil SSA/STM Sandbox for the OADR" Dept. of Commerce, NOAA via UT-ARL, \$450,000 (Jah's Share \$150,000), Dec 2021 – Dec 2022, Principal Investigator

While at the Air Force Research Laboratory: Total: \$51,500,000 (Jah's Share: \$28,000,000)

1. DARPA Orbit Outlook Program, \$10M (Jah's Share \$5M), Technical Lead (2014-2015).
2. Various Air Force SBIR/STTR Programs, \$15M (Jah's Share \$15M), Technical Lead (2010-2015).
3. DARPA Ibex Program, \$20M (Jah's Share \$1.5M), Technical Lead and PI (2010-2012).

4. Satellite and Missile Systems Center (SMC), \$1.5M (Jah's Share \$1.5M), PI (2010-2012).
5. Air Force Office of Scientific Research (AFOSR), \$1.5M (Jah's Share \$1.5M), PI (2009-2013).
6. AFOSR International, \$1.5M (Jah's Share \$1.5M), Technical Lead (2009-2013).
7. National Research Council (NRC) Research Associateship, \$2M (Jah's Share \$2M), Adviser (2009-2015).

PH.D. SUPERVISIONS COMPLETED:

1. Samantha Le May (co-supervised) [Royal Melbourne Institute of Technology – Australia](2021)

M.S. SUPERVISIONS COMPLETED:

1. Justin Spurbeck [University of Texas at Austin] Thesis Option (2019)
2. Marcus Bever [University of Texas at Austin] Thesis Option (2020)
3. Vivek Desai [University of Texas at Austin] (2020)
4. Vishnuu Mallik [University of Texas at Austin] (2021)
5. James Crowley [University of Texas at Austin] (2021)
6. Michael Reinhold [University of Texas at Austin] (2021)

PH.D. SUPERVISION IN PROGRESS:

1. Shiva Iyer [University of Texas at Austin] (2018 – present) [Candidacy Reached June 2019]
2. Benjamin Miller [University of Texas at Austin] (2019 – present) [Candidacy Reached June 2021]
3. Apoorva Karra [University of Texas at Austin] (2019 – present) [Candidacy Reached June 2021]
4. Nevan Simone [University of Texas at Austin] (2019 – present)
5. Tiffany Phan [University of Texas at Austin] (2021– present)
6. Keith Poletti [University of Texas at Austin] (2021– present)
7. Qing Zhu [University of Texas at Austin] (2021– present)

M.S. SUPERVISION IN PROGRESS:

N/A

PH.D. COMMITTEES:

1. Kyle DeMars, University of Texas at Austin (2010).
2. Jill Tombasco, University of Colorado at Boulder (2011).
3. Aaron Rosengren, University of Colorado at Boulder (2014).
4. Richard Linares, University of Buffalo (2014).
5. Antonella Albuja, University of Colorado (2015).
6. Ryan Coder, Georgia Institute of Technology (2016).
7. Vitali Braun, Technische Universität Braunschweig (2016).
8. Patrick Kenneally, University of Colorado at Boulder (2019).
9. Kerianne Hobbs, Georgia Institute of Technology (2020).
10. Kirsten Tuggle, University of Texas at Austin (2020).
11. Nicholas Ravago, University of Texas at Austin (2018-present).

OTHER STUDENT RESEARCH COMMITTEES (Current):

Ph.D. Committees - 0

M.S. Committees – 0

Moriba Jah, Associate Professor

The University of Texas at Austin
Department of Aerospace Engineering and Engineering Mechanics
Mrs. Pearlie Dashiell Henderson Centennial Fellowship in Engineering

Dr. Moriba Jah is the Director of the Computational Astronautical Sciences and Technologies (CAST) group within the Institute for Computational Engineering and Sciences at The University of Texas at Austin, where he is also an Associate Professor of Aerospace Engineering and Engineering Mechanics in the Cockrell School of Engineering. He holds the Mrs. Pearlie Dashiell Henderson Centennial Fellowship in Engineering and trains a new generation of astrodynamists and space traffic leaders through research and education at the intersection of engineering, policy, and commercialization. He has authored more than 100 scientific articles, columns, and book chapters, including a handful of op-eds. A highly sought public speaker, he has given more than 50 lectures, speeches, and invited talks in the last few years, such as testimony for hearings of U.S. Senate committees, keynotes for business meetings, plenary lectures for scientific conferences, lecture series for NATO's Science and Technology Organization, TED and TEDx talks, and the Air Force Research Laboratory's INSPIRE series. Dr. Jah has served as a member of the U.S. delegation to the United Nations Committee on the Peaceful Uses of Outer Space (UN-COPUOS) and is the chair of the NATO SCI-279-TG activity on defining a Common NATO Space Domain Awareness Operating Picture. Dr. Jah is also the Chief Scientific Advisor for Privateer Space Inc., a company focused on delivering bespoke decision intelligence at the speed of relevance addressing space safety, security, and sustainability needs.

As a professor, Dr. Jah has taught undergraduate and graduate courses at UT Austin related to space and astronautical sciences. Dr. Jah's research focuses on the convergence of policy, technology, and security related to space traffic management and space situational awareness. Government agencies such as the Department of Defense, Air Force Research Laboratory, and others as well as non-governmental organizations and private industry have featured Dr. Jah's research in their own decision-making processes. His expertise, opinions, and research have been published, cited or featured in many media outlets, including the SpaceWatch Global, pace News, Wired, ROOM, NatGeo, NPR, BBC, ABC, and others.

Prior to being at UT Austin, Dr. Jah was the Director of the University of Arizona's Space Object Behavioral Sciences with applications to Space Domain Awareness, Space Protection, Space Traffic Monitoring, and Space Debris research. Preceding that, Dr. Jah was the lead for the Air Force Research Laboratory's (AFRL) Advanced Sciences and Technology Research Institute for Astronautics (ASTRIA) and Technical Advisor to the Guidance, Navigation, and Control Program at AFRL's Space Vehicles Directorate. He received his B.S. in Aerospace Engineering from Embry-Riddle Aeronautical University, Prescott, Arizona, and his M.S. and Ph.D. in Aerospace Engineering Sciences from the University of Colorado at Boulder specializing in astrodynamics and statistical orbit determination. Before joining AFRL in 2007, he was a spacecraft navigator for NASA's Jet Propulsion Laboratory (JPL) in Pasadena, CA, serving on Mars Global Surveyor, Mars Odyssey, Mars Express (joint mission with ESA), Mars Exploration Rovers, Hayabusa (joint mission with JAXA), and the Mars Reconnaissance Orbiter. Dr. Jah founded the American Astronautical Society's (AAS) Space Surveillance Technical Committee and Chaired the AIAA Astrodynamics Technical Committee. He is a member of the Astrodynamics Committee of the International Astronautical Federation (IAF) and a permanent member of the Space Debris Committee of the International Academy of Astronautics (IAA). Dr. Jah is an elected member of the International Academy of Astronautics (IAA), a TED Fellow, a Fellow of the American Institute of Aeronautics and Astronautics (AIAA), the International Association for the Advancement of Space Safety (IAASS), the AFRL, the AAS and the Royal Astronomical Society (RAS), as well as an IEEE Senior Member, Associate Editor of Elsevier's Advances in Space Research, Acta Astronautica, and Space Safety Engineering Journals.