

Mitchell M. Shen

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Associate Research Scholar

Department of Astrophysical Sciences, Princeton University

171 Broadmead St, Princeton, NJ 08540

EDUCATION

- University of Colorado Boulder** 08/2018 – 07/2021
 Ph.D., Aerospace Engineering Sciences
 Dissertation: Cosmic Dust Detection by Antenna Instruments
 Advisor: Zoltán Sternovsky
- National Cheng Kung University, Taiwan** 08/2014 – 01/2017
 M.S., Aeronautics and Astronautics
 Thesis: Development of a Micro ECR Ion Thruster for Space Propulsion
 Advisor: Yei-Chin Chao, Co-Advisor: Wing-Yee Tam
- National Cheng Kung University, Taiwan** 08/2010 – 06/2014
 B.S., Aeronautics and Astronautics
 Project: The Generalization of Complex Mechanics
 Advisor: Ciann-Dong Yang

RESEARCH EXPERIENCES

- Princeton University**
 Space Physics group @ Department of Astrophysical Sciences
Associate Research Scholar 09/2023 – *present*
Postdoctoral Research Associate 09/2021 – 09/2023
- University of Colorado Boulder**
 IMPACT Lab @ Laboratory for Atmospheric and Space Physics
Graduate Research Assistant 08/2018 – 08/2021
- National Cheng Kung University, Taiwan**
 LASC Lab @ Department of Earth Sciences
Research Assistant (Full time) 03/2017 – 07/2018
- National Cheng Kung University, Taiwan**
 Combustion Lab @ Department of Aeronautics and Astronautics
Graduate Research Assistant 07/2014 – 01/2017

RESEARCH INTERESTS

Cosmic dust population & dynamics; Dust detection by electric field antenna instruments; Dust rings & ring-planet interactions; Transportation & Acceleration of energetic particles; Interaction of heliosphere with local interstellar medium; Neutral-atom astronomy; Space plasmas & Spacecraft charging; Magnetospheres-ionosphere-thermosphere couplings; Beam sources & diagnostics; Instrument development & calibrations; Electric propulsion.

MISSION & INSTRUMENT EXPERIENCES (*science*[†], *development*^{*}, *calibration*[‡])

<i>Solar Orbiter</i> — RPW [†] <i>GI</i>	2024 – <i>present</i>
<i>Juno</i> — Waves [†]	2023 – <i>present</i>
<i>Voyager</i> — PWS [†]	2022 – <i>present</i>
<i>IMAP</i> — SWAPI ^{*‡} , IMAP-Lo ^{*‡} <i>cal-lead</i>	2021 – <i>present</i>
<i>Parker Solar Probe</i> — IS [⊙] IS [†] , FIELDS [†] , SWEAP [†]	2021 – <i>present</i>
<i>Cassini</i> — RPWS [†]	2018 – 2020

MODELING EXPERIENCES

<i>CST Studio Suite</i> — simulate spacecraft induced charging	2021 – <i>present</i>
<i>GMAT</i> — space mission trajectory design	2020 – 2020
<i>Matsumura Model</i> — non-hydrostatic full-fluid Earth ionosphere model	2017 – 2018
<i>AGI STK</i> — orbital trajectory simulation	2017 – 2018
<i>COMSOL</i> — ECR plasma simulation for ion thruster	2015 – 2017
<i>SIMION</i> — ion optics of thrusters & instruments	2015 – <i>present</i>
<i>ANSYS Fluent</i> — gas dynamics & molecular diffusion	2015 – 2016
<i>CHEMKIN-Pro</i> — chemical kinetics & reaction process of combustion	2014 – 2015

HONORS & AWARDS

<i>NASA Group Achievement Award</i> — Parker Solar Probe Team	2023
<i>Government Scholarship to Study Abroad</i> — Ministry of Education, Taiwan	2020
<i>Graduate School UF Scholarship</i> — University of Colorado Boulder	2018

FUNDED RESEARCH

PI – NASA ROSES-23 Solar Orbiter Guest Investigators – \$563,740 <i>Inner Heliospheric Dust Environment</i> (80NSSC24K1442)	2024 – 2027
PI – NASA ROSES-22 New Frontiers Data Analysis Program – \$201,915 <i>The Dust Environment Near Jupiter</i> (80NSSC23K0657)	2023 – 2026

PEER-REVIEWED PUBLICATIONS (*Citations: 283, h-index: 10, first author: 4*)

- [22] Cuesta, M. E., Cummings, A. T., Livadiotis, G., McComas, D. J., Cohen, C. M. S., Khoo, L. Y., Sharma, T., **Shen, M. M.**, Bandyopadhyay, R., Rankin, J. S., Szalay, J. R., Farooki, H. A., Xu, Z., Muro, G. D., Stevens, M. L., & Bale, S. D. (2024). Observations of kappa distributions in solar energetic protons and derived thermodynamic properties. *The Astrophysical Journal*, 973(2), 76. <https://doi.org/10.3847/1538-4357/ad68fd>
- [21] Livadiotis, G., Cummings, A. T., Cuesta, M. E., Bandyopadhyay, R., Farooki, H. A., Khoo, L. Y., McComas, D. J., Rankin, J. S., Sharma, T., **Shen, M. M.**, Cohen, C. M. S., Muro, G. D., & Xu, Z. (2024). Kappa-tail technique: Modeling and application to solar energetic particles observed by parker solar probe. *The Astrophysical Journal*, 973(1), 6. <https://doi.org/10.3847/1538-4357/ad5e72>
- [20] Schwadron, N. A., Bale, S. D., Bonnell, J., Case, A., **Shen, M.**, Christian, E. R., Cohen, C. M. S., Davis, A. J., Desai, M. I., Goetz, K., Giacalone, J., Hill, M. E., Kasper, J. C., Korreck, K., Larson, D., Livi, R., Lim, T., Leske, R. A., Malandraki, O., ... Whittlesey, P. (2024). Parker solar probe observations of energetic particles in the flank of a coronal

- mass ejection close to the sun. *The Astrophysical Journal*, 970(1), 98. <https://doi.org/10.3847/1538-4357/ad527f>
- [19] Cohen, C. M. S., Leske, R. A., Christian, E. R., Cummings, A. C., de Nolfo, G. A., Desai, M. I., Giacalone, J., Hill, M. E., Labrador, A. W., McComas, D. J., McNutt, R. L., Mewaldt, R. A., Mitchell, D. G., Mitchell, J. G., Muro, G. D., Rankin, J. S., Schwadron, N. A., Sharma, T., **Shen, M. M.**, ... Whittlesey, P. (2024). Observations of the 2022 september 5 solar energetic particle event at 15 solar radii. *The Astrophysical Journal*, 966(2), 148. <https://doi.org/10.3847/1538-4357/ad37f8>
- [18] Cuesta, M. E., McComas, D. J., Khoo, L. Y., Bandyopadhyay, R., Sharma, T., **Shen, M. M.**, Rankin, J. S., Cummings, A. T., Szalay, J. R., Cohen, C. M. S., Schwadron, N. A., Chhiber, R., Pecora, F., Matthaeus, W. H., Leske, R. A., & Stevens, M. L. (2024). Correlation of coronal mass ejection shock temperature with solar energetic particle intensity. *The Astrophysical Journal*, 964(2), 114. <https://doi.org/10.3847/1538-4357/ad245d>
- [17] Sterken, V. J., Hunziker, S., Dialynas, K., Leitner, J., Sommer, M., Srama, R., Baalman, L. R., Li, A., Herbst, K., Galli, A., Brandt, P., Riebe, M., Baggaley, W. J., Blanc, M., Czechowski, A., Effenberger, F., Fields, B., Frisch, P., Horanyi, M., ... Trieloff, M. (2023). Synergies between interstellar dust and heliospheric science with an interstellar probe. *RAS Techniques and Instruments*, 2(1), 532–547. <https://doi.org/10.1093/rasti/rzad034>
- [16] Zimbardo, G., Ying, B., Nisticò, G., Feng, L., Rodríguez-García, L., Panasenco, O., Andretta, V., Banerjee, D., Bemporad, A., De Leo, Y., Franci, L., Frassati, F., Habbal, S., Long, D., Magdalenic, J., Mancuso, S., Naletto, G., Perri, S., Romoli, M., ... Uslenghi, M. (2023). A high-latitude coronal mass ejection observed by a constellation of coronagraphs: Solar Orbiter/Metis, STEREO-A/COR2, and SOHO/LASCO. *A&A*, 676, A48. <https://doi.org/10.1051/0004-6361/202346011>
- [15] Hsieh, J. H., **Shen, M. M.**, Li, Y.-H., & Huang, P.-H. (2023). Development of a lanthanum hexaboride hollow cathode for a magnetic octupole thruster. *Vacuum*, 112146. <https://doi.org/10.1016/j.vacuum.2023.112146>
- [14] **Shen, M. M.**, Sternovsky, Z., & Malaspina, D. M. (2023). Variability of antenna signals from dust impacts. *Journal of Geophysical Research: Space Physics*, 128(4), e2022JA030981. <https://doi.org/10.1029/2022JA030981>
- [13] Khoo, L. Y., McComas, D. J., Rankin, J. S., **Shen, M. M.**, Sharma, T., & Shi, C. (2023). Compensating for gyroradius effects in beamlines with small Helmholtz coils. *Review of Scientific Instruments*, 94(3), 035102. <https://doi.org/10.1063/5.0135154>
- [12] Li, Y.-H., Huang, T.-Y., **Shen, M. M.**, & Chen, Y.-C. (2023). Development of Miniature Radio Frequency Ion Thruster with Inductively Coupled Plasma Source. *Journal of Aeronautics, Astronautics and Aviation*, 55(1), 13–28. [https://doi.org/10.6125/JoAAA.202303-55\(1\).02](https://doi.org/10.6125/JoAAA.202303-55(1).02)
- [11] McComas, D. J., Sharma, T., Christian, E. R., Cohen, C. M. S., Desai, M. I., Hill, M. E., Khoo, L. Y., Matthaeus, W. H., Mitchell, D. G., Pecora, F., Rankin, J. S., Schwadron, N. A., Szalay, J. R., **Shen, M. M.**, Braga, C. R., Mostafavi, P. S., & Bale, S. D. (2023). Parker Solar Probe Encounters the Leg of a Coronal Mass Ejection at 14 Solar Radii. *The Astrophysical Journal*, 943(2), 71. <https://doi.org/10.3847/1538-4357/acab5e>
- [10] Mitchell, J. G., Cohen, C. M. S., Eddy, T. J., Joyce, C. J., Rankin, J. S., **Shen, M. M.**, de Nolfo, G. A., Christian, E. R., McComas, D. J., McNutt, R. L., Wiedenbeck, M. E., Schwadron, N. A., Hill, M. E., Labrador, A. W., Leske, R. A., Mewaldt, R. A., Mitchell,

- D. G., & Szalay, J. R. (2023). A Living Catalog of Parker Solar Probe IS \odot IS Energetic Particle Enhancements. *The Astrophysical Journal Supplement Series*, 264(2), 31. <https://doi.org/10.3847/1538-4365/aca4c8>
- [9] Malaspina, D. M., Stenborg, G., Mehoke, D., Al-Ghazwi, A., **Shen, M. M.**, Hsu, H.-W., Iyer, K., Bale, S. D., & de Wit, T. D. (2022). Clouds of Spacecraft Debris Liberated by Hypervelocity Dust Impacts on Parker Solar Probe. *The Astrophysical Journal*, 925(1), 27. <https://doi.org/10.3847/1538-4357/ac3bbb>
- [8] **Shen, M. M.**, Sternovsky, Z., Garzelli, A., & Malaspina, D. M. (2021). Electrostatic Model for Antenna Signal Generation From Dust Impacts. *Journal of Geophysical Research: Space Physics*, 126(9), e2021JA029645. <https://doi.org/10.1029/2021JA029645>
- [7] **Shen, M. M.**, Sternovsky, Z., Horányi, M., Hsu, H.-W., & Malaspina, D. M. (2021). Laboratory Study of Antenna Signals Generated by Dust Impacts on Spacecraft. *Journal of Geophysical Research: Space Physics*, 126(4), e2020JA028965. <https://doi.org/10.1029/2020JA028965>
- [6] Sun, Y.-Y., **Shen, M. M.**, Tsai, Y.-L., Lin, C.-Y., Chou, M.-Y., Yu, T., Lin, K., Huang, Q., Wang, J., Qiu, L., Chen, C.-H., & Liu, J.-Y. (2021). Wave Steepening in Ionospheric Total Electron Density due to the 21 August 2017 Total Solar Eclipse. *Journal of Geophysical Research: Space Physics*, 126(3), e2020JA028931. <https://doi.org/10.1029/2020JA028931>
- [5] Nouzák, L., Sternovsky, Z., Horányi, M., Hsu, S., Pavlů, J., **Shen, M.-H.**, & Ye, S.-Y. (2020). Magnetic Field Effect on Antenna Signals Induced by Dust Particle Impacts. *Journal of Geophysical Research: Space Physics*, 125(1), e2019JA027245. <https://doi.org/10.1029/2019JA027245>
- [4] Chou, M.-Y., Lin, C. C. H., **Shen, M.-H.**, Yue, J., Huba, J. D., & Chen, C.-H. (2018). Ionospheric Disturbances Triggered by SpaceX Falcon Heavy. *Geophysical Research Letters*, 45(13), 6334–6342. <https://doi.org/10.1029/2018GL078088>
- [3] Chou, M.-Y., **Shen, M.-H.**, Lin, C. C. H., Yue, J., Chen, C.-H., Liu, J.-Y., & Lin, J.-T. (2018). Gigantic Circular Shock Acoustic Waves in the Ionosphere Triggered by the Launch of FORMOSAT-5 Satellite. *Space Weather*, 16(2), 172–184. <https://doi.org/10.1002/2017SW001738>
- [2] Sun, Y.-Y., Liu, J.-Y., Lin, C. C.-H., Lin, C.-Y., **Shen, M.-H.**, Chen, C.-H., Chen, C.-H., & Chou, M.-Y. (2018). Ionospheric Bow Wave Induced by the Moon Shadow Ship Over the Continent of United States on 21 August 2017. *Geophysical Research Letters*, 45(2), 538–544. <https://doi.org/10.1002/2017GL075926>
- [1] Lin, C. C. H., **Shen, M.-H.**, Chou, M.-Y., Chen, C.-H., Yue, J., Chen, P.-C., & Matsumura, M. (2017). Concentric traveling ionospheric disturbances triggered by the launch of a SpaceX Falcon 9 rocket. *Geophysical Research Letters*, 44(15), 7578–7586. <https://doi.org/10.1002/2017GL074192>

SELECTED CONFERENCE PROCEEDINGS

- [13] Cohen, C., Christian, E., Cummings, A. C., Davis, A., De Nolfo, G. A., Desai, M., Gicalone, J., Hill, M., Labrador, A., Leske, R., McComas, D., McNutt Jr., R. L., Mewaldt, R. A., Mitchell, D. G., Mitchell, J., Rankin, J., Schwadron, N., Sharma, T., **Shen, M.**, ... Whittlesey, P. (2023). Parker Solar Probe Energetic Particle Observations of the September 5, 2022 SEP Event. *PoS, ICRC2023*, 1276. <https://doi.org/10.22323/1.444.1276>

- [12] Leske, R., Christian, E., Cohen, C., Cummings, A. C., Davis, A., De Nolfo, G. A., Desai, M., Giacalone, J., Hill, M., Labrador, A., McComas, D., McNutt Jr., R. L., Mewaldt, R. A., Mitchell, D. G., Mitchell, J. G., Rankin, J., Schwadron, N., Sharma, T., **Shen, M.**, ... Whittlesey, P. (2023). Observations of Extremely 3He-Rich Solar Energetic Particle Events from Parker Solar Probe. *PoS, ICRC2023*, 1251. <https://doi.org/10.22323/1.444.1251>
- [11] Huang, B.-H., Li, Y.-H., **Shen, M. M.**, Huang, T.-Y., Lien, W.-C., & Hsieh, J. H. (2022). Triple Langmuir Probe Diagnostics for Vacuum Arc Thruster with Multilayer Electrodes. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [10] Hsieh, J. H., Li, Y.-H., **Shen, M. M.**, & Huang, Y.-L. (2022). Cylindrical Magnetic Quadrupole Plasma Thruster with a Filament Emitter Hollow Cathode. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [9] Hsieh, J. H., Li, Y.-H., **Shen, M. M.**, Lien, W.-C., & Lin, P.-H. (2022). Hectowatt-Class Double-Peaked Hall Thruster for Future Space Missions. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [8] Huang, Y.-L., Li, Y.-H., **Shen, M. M.**, Huang, T.-Y., & Hsieh, J. H. (2022). Development of a low power cylindrical Hall thruster with tungsten filament cathode. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [7] Chen, Y.-C., Li, Y.-H., **Shen, M. M.**, Liu, S.-W., & Huang, T.-Y. (2022). Stability Control of Inductively Coupled Plasma for RF Ion Thrusters. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [6] Hsieh, J. H., Li, Y.-H., **Shen, M. M.**, & Huang, B.-H. (2022). LaB6 Hollow Cathode Design and Development for Magnetic Octupole Plasma Thruster. *International electric propulsion conference 2022*. https://www.electricrocket.org/IEPC_2022_Papers.html
- [5] Hsieh, J. H., Li, Y.-H., Lee, H.-Y., & **Shen, M.-H.** (2021). Development of Wien Filter for a low-power Hall Thruster Plume Characterization. *Aiaa propulsion and energy 2021 forum*. <https://doi.org/10.2514/6.2021-3380>
- [4] Huang, T.-Y., Li, Y.-H., **Shen, M.-H.**, & Chen, Y.-C. (2021). Development of a Miniature Radio-Frequency Ion Engine with Inductively Coupled Plasma (ICP) Source for Cube Satellite Propulsion. *Aiaa propulsion and energy 2021 forum*. <https://doi.org/10.2514/6.2021-3417>
- [3] **Shen, M.-H.**, Fang, H.-K., Chao, Y.-C., Tam, S. W., & Li, Y.-H. (2017). Development of a Micro ECR Ion Thruster for Space Propulsion. *International electric propulsion conference 2017*. http://electricrocket.org/IEPC/IEPC_2017_466.pdf
- [2] Chang, T.-W., Li, H.-Y., Cheng, T.-S., Chao, Y.-C., & **Shen, M.-H.** (2017). The Reattachment Process of Turbulent Lifted Diffusion Jet Flames Induced by Repetitive DC Electric Pulse Discharges. *26th international colloquium on the dynamics of explosions and reactive systems*. <http://www.icders.org/ICDERS2017/abstracts/ICDERS2017-1125.pdf>
- [1] Li, H.-Y., **Shen, M.-H.**, & Chao, Y.-C. (2016). A Comprehensive Study of the Effects of Microwave induced Plasma on Premixed Methane-Air Flames. *The 26th national conference on combustion and energy*. <https://reurl.cc/xg6Z65>

POPULAR SCIENCE PRESS & WHITE PAPERS

- [6] Lin, C. C. H., Chou, M.-Y., & **Shen, M. M.** (2024). 前往太空的第一步：看火箭如何跨越電離層. 科學月刊9月號/2024 第657期. <https://www.scimonth.com.tw/archives/11068>
- [5] Poppe, A., Szalay, J., Horanyi, M., Draine, B., Sterken, V., Opher, M., Chen, T. Y., Hsu, H.-W., Mann, I., **Shen, M. M.**, Reach, W. T., Frisch, P. C., Pokorny, P., Wang, X., Linsky, J., Flynn, G., Lisse, C., Malaspina, D., Postberg, F., ... Altobelli, N. (2023). The Interactions of Interstellar Dust with our Heliosphere. *Bulletin of the AAS*. <https://doi.org/10.3847/25c2cfcb.3a119191>
- [4] Hsu, H.-W., Poppe, A., Szalay, J., Horanyi, M., Sterken, V., Chen, T. Y., Mann, I., **Shen, M. M.**, Frisch, P. C., Elschot, S., Malaspina, D., Wang, X., Postberg, F., Kurth, W., Czechowski, A., Vaverka, J., Li, Y., Nouzak, L., Morooka, M., ... Altobelli, N. (2023). In Situ Cosmic Dust Detection for Heliophysics. *Bulletin of the AAS*. <https://doi.org/10.3847/25c2cfcb.b165eaae>
- [3] Lin, C. C. H., Chou, M.-Y., & **Shen, M.-H.** (2018). Ionospheric plasma hole and gigantic shock waves induced by the launch of FORMOSAT-5 using the Space-X rocket. 成大研發快訊, 31(8). <http://ir.lib.ncku.edu.tw/handle/987654321/183711>
- [2] **Shen, M.-H.**, Chou, M.-Y., & Lin, C. C. H. (2018). SpaceX獵鷹重型火箭的太空夢：人類登陸火星、重返月球就靠它. The News Lens關鍵評論. <https://www.thenewslens.com/article/89183>
- [1] Lin, C. C. H., **Shen, M.-H.**, & Chen, P.-C. (2018). 為何這次Falcon 9發射升空，會產生像UFO的特殊形狀？. PanSci 泛科學. <https://pansci.asia/archives/133675>

INVITED TALKS & GUEST LECTURES

- [3] Introduction to Space Instrumentation, guest lecture of Introduction to space science and engineering, National Cheng Kung University, Tainan, Taiwan. (Jun 2022)
- [2] Understanding cosmic dust detection using antenna instruments, AGU Fall Meeting 2021, New Orleans, US. (Dec 2021)
- [1] Principles and Applications of Space Instrumentation, guest lecture of Introduction to space science and engineering, National Cheng Kung University, Tainan, Taiwan. (Jun 2021)

SEMINARS & COLLOQUIA

- [6] Dust Detection by Antenna Instruments: Modeling and Measurements, Space Physics seminar, University of California, Berkeley, CA, USA. (Mar 2021)
- [5] Introduction to Electric Propulsion and Ongoing Projects at NCKU, Taiwanese Young Research Association, CA, USA. <https://youtu.be/4c8qFWg3JCw> (Mar 2021)
- [4] Dust Detection by Antenna Instruments, Taiwanese Young Research Association, CA, USA. <https://youtu.be/VpRneRhmItk> (Dec 2020)
- [3] How do we IMPACT on Space and Planetary Science? In Dust we Trust., CU STEMinar, University of Colorado Boulder, Boulder, CO, USA. <https://youtu.be/3zw1Tz1x7n0> (Nov 2020)
- [2] How do we IMPACT on Space and Planetary Science? In Dust we Trust., National Central University, Taoyuan, Taiwan. (May 2019)
- [1] Introduction to Chemical and Electric Propulsion for Space Exploration and Ongoing Research in NCKU, National Central University, Taoyuan, Taiwan. (Feb 2017)

TEACHING EXPERIENCES

- 09/2021 — present* **Princeton University**
Department of Astrophysical Sciences
Instructional Staff
- AST250 Space Physics Laboratory I (Fall 21' 22' 23')
 - AST251 Space Physics Laboratory II (Spring 22' 23' 24')
- 09/2014 — 01/2017* **National Cheng Kung University, Taiwan**
Department of Aeronautics and Astronautics
Graduate Teaching Assistant
- Clean Fossil Fuel Technology (Fall 15' 16')
 - Combustion Theory (Fall 14')
 - Energy Saving in Building (Spring 16', Fall 16')
 - Energy Strategy (Spring 16')
 - Thermodynamics II (Spring 15')

MENTORING EXPERIENCES

- 04/2024 — present* **Ta-Yen Huang**
Ph.D., National Cheng Kung University, Taiwan
Focus: Optimization of RF ICP Ion Thruster
- 04/2024 — present* **She-Shen Li**
M.S., National Cheng Kung University, Taiwan
Focus: Optimization of RF ICP Ion Thruster
- 12/2020 — 12/2021* **Yi-Long Huang**
M.S., National Cheng Kung University, Taiwan
Focus: Discharge Voltage Characteristics of LaB6 Hollow Cathode
- 12/2020 — 12/2021* **Jordan H. Hsieh**
B.S., National Cheng Kung University, Taiwan
Focus: Hall Effect Thruster, hollow cathode
- 09/2020 — 12/2021* **Ping-Han Huang**
M.S., National Cheng Kung University, Taiwan
Focus: Development of a Vacuum Arc Thruster with Multilayer Electrodes
- 09/2020 — 12/2021* **Yi-Chien Chen**
M.S., National Cheng Kung University, Taiwan
Focus: Optimization of Ion Propulsion
- 09/2020 — 10/2021* **Ta-Yen Huang**
M.S., National Cheng Kung University, Taiwan
Thesis: Development of a Miniature Radio-Frequency ICP Ion Thruster
- 09/2020 — 02/2021* **Alessandro Garzelli**
M.S., Politécnico di Milano, Italy
Thesis: Electrostatic model for antenna signal generation from dust impacts

PROFESSIONAL EXPERIENCES

- 03/2023 — present* **Calibration Lead of IMAP/IMAP-Lo**
NASA Interstellar Mapping and Acceleration Probe (IMAP) mission
- 02/2022 — present* **Global Ambassador**
Global Engagement Office, CU Boulder

08/2019 — 12/2019 **Student Project Manager of Cubesat CANVAS**
 Department of Aerospace Engineering Sciences, CU Boulder

09/2018 — 12/2018 **CU Science Ambassador**
 CU Science Discovery, CU Boulder

01/2014 — 02/2014 **Intern (Basic Flight)**
 Flight Operations Division, EVA Air

07/2013 — 08/2013 **Intern (Aircraft Maintenance)**
 Evergreen Aviation Technologies Corporation

07/2012 — 08/2012 **Intern (Plaster Additive Manufacturing)**
 Research and Services Headquarter, Nat'l Cheng Kung Univ.

09/2011 — 06/2012 **Vice Leader of Curriculum Section**
 Leadership Center, Nat'l Cheng Kung Univ.

PROFESSIONAL CERTIFICATIONS

07/2023 — present **Leadership Skills for Engineering and Science Faculty**
 July 10, 2023 - July 11, 2023, Credential ID 79201948
 MIT Professional Education

02/2014 — present **Professional Training Course of Aircraft Maintenance**
 480hrs from 2013/07 – 2014/02, #L20140211-TRD-015
 EVERGREEN Aviation Technologies Corp.

08/2010 — present **AutoCAD 2010 Certified Professional**
 August 14, 2010, Credential ID 00103578
 Autodesk, Inc.

SERVICE

- **Journal Reviewer:** *JGR: Space Physics* (*x1*), *Space Weather* (*x2*), *EPSL* (*x1*), *ApJ* (*x1*)
- **NASA Review Panels:** Executive Secretary (22')
- **Science Organizing Committee:** Parker Two Conference (22')
- **Thesis Committee:** student mentees at Nat'l Cheng Kung Univ. in TWN (*x1*)

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