

# WAEEL FARAH

Curriculum Vitae

## PERSONAL DATA

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ADDRESS: 42231 Bidwell Rd, Hat Creek, CA 96040, United States  
PHONE: (+1) 510 590 6665  
EMAIL: [wael.a.farah@gmail.com](mailto:wael.a.farah@gmail.com)  
GITHUB: <https://github.com/wfarah>

## EDUCATION

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APR 2016 - APR 2020 **Ph.D. in Astrophysics**  
Thesis title: *“Machine Learning, real-time techniques for the discovery, analysis and study of Fast Radio Bursts”*  
Swinburne University of Technology, Melbourne - Australia  
Supervisors: M. Bailes, C. Flynn, C. Fluke

SEP 2013 - NOV 2015 **M.Sc. in Astrophysics**  
Thesis title: *“Estimating Stellar atmospheric parameters using PCA: Application to GES data”*  
Supervisors: M. Gebran, F. Paletou  
Saint Joseph & Notre Dame Universities, Lebanon (*Joint Program*)

SEP 2010 - JUL 2013 **B.Sc. in Physics**  
The Lebanese University - Faculty of Science, Fanar - Lebanon  
*Graduated with Honours, Ranking: 2/19*

## WORK EXPERIENCE

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| MAR 2020 - CURRENT | Postdoctoral researcher at the SETI INSTITUTE<br>Working on refurbishing the Allen Telescope Array<br><b>Employer:</b> Andrew Siemion; <b>Email:</b> <a href="mailto:siemion@berkeley.edu">siemion@berkeley.edu</a>  |
| MAY - DEC 2017     | Part time data analyst at CTI - SWINBURNE<br>The position entailed working on text data preparation, database management, data analysis, and producing publication quality figures<br><b>Employer:</b> Russell Thomson; <b>Email:</b> <a href="mailto:russellthomson@swin.edu.au">russellthomson@swin.edu.au</a> |
| FEB - NOV 2017     | Lab demonstrator and discussion group moderator at SWINBURNE<br><i>Energy and Motion/Introduction to e-Science</i> courses<br><b>Employer:</b> Chris Fluke; <b>Email:</b> <a href="mailto:cfluke@swin.edu.au">cfluke@swin.edu.au</a>   |

## SCHOLARSHIPS AND AWARDS

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- NOV 2018 Awarded the Swinburne Vice-Chancellor's Research Excellence Award Team Category  
JUN 2018 Awarded the best poster award at the ASA2018 annual meeting  
MAR 2016 Awarded a SUPRA scholarship to pursue a PhD at Swinburne University  
SEP 2013 Awarded a graduate fellowship/scholarship to pursue a M.Sc. at Notre Dame University  
JUN 2013 Honour Award for ranking 2<sup>nd</sup> in my B.Sc. in Physics Promotion  
JUN 2013 Excellence Award for Ranking 1<sup>st</sup> in my 3<sup>rd</sup> Year in Physics  
JUN 2012 Honour Award for Ranking 2<sup>nd</sup> in my 2<sup>nd</sup> Year in Physics

## COMPUTER SKILLS

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- Languages/Environments: MATLAB, R, C/C++, PYTHON,  
CYTHON, C SHELL and BASH  
Operating systems: LINUX, MACOS  
Tools and platforms: Machine learning (scikit-learn, Keras, TensorFlow), CUDA,  
SLURM scheduler, HPC systems & distributed computing

## SEMINARS AND CONFERENCES

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- JUN 2019 **EWASS 2019**, Lyon  
Talk title: *Real-time Fast Radio Burst discoveries with the Molonglo Radio Telescope*  
SEP 2018 **The first Caltech-Swinburne Data Science Workshop**, Caltech  
Talk title: *Machine Learning for the Detection of FRBs*  
JUN 2018 **ASA Annual Scientific Meeting 2018**  
Poster title: *Fast Radio Bursts at the Molonglo Radio Telescope*  
MAY 2018 **Collaborative Conference on Computational and  
Data Intensive Science 2018 (C3DIS 2018)**, Melbourne  
Talk title: *Machine learning for the discovery of millisecond radio bursts*  
MAY 2018 **Australasian pulsar meeting**  
Talk title: *FRB and pulsar science with UTMOST*  
FEB 2018 **FRB2018: Finding and understanding Fast Radio Bursts**, Swinburne  
Talk title: *Microstructure revealed by the real-time detection of FRB170827*

## PUBLICATIONS

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- **Farah, W.** et al., 2019, “*Five new real-time detections of Fast Radio Bursts with UTMOST*”, [2019MNRAS.488.2989F](#)
- **Farah, W.** et al., 2018, “*FRB microstructure revealed by the real-time detection of FRB170827*”, [2018MNRAS.478.1209F](#)
- Kumar, P., ..., **Farah, W.** et al., 2020 “*Extremely band-limited repetition from a fast radio burst source*”, [2020arXiv200901214K](#)
- Qiu, H., Shannon, R. M., **Farah, W.** et al., 2020 “*A population analysis of pulse broadening in ASKAP fast radio bursts*”, [2020MNRAS.497.1382Q](#)
- James, C. W., ..., **Farah, W.** et al., 2020 “*Which bright fast radio bursts repeat?*”, [2020MNRAS.495.2416J](#)
- James, C. W., ..., **Farah, W.** et al., 2020 “*Measurement of the Rate Distribution of the Population of Repeating Fast Radio Bursts: Implications for Progenitor Models*”, [2020ApJ...895L..22J](#)
- Lower, M. E., ... **Farah, W.** et al., 2020 “*The UTMOST pulsar timing programme II: Timing noise across the pulsar population*”, [2020MNRAS.494..228L](#)
- Cho, H., ..., **Farah, W.** et al., 2020 “*Spectropolarimetric analysis of FRB 181112 at microsecond resolution: Implications for Fast Radio Burst emission mechanism*”, [2020ApJ...891L..38C](#)
- Venkatraman Krishnan, V., ..., **Farah, W.** et al. 2019, “*The UTMOST Survey for Magnetars, Intermittent pulsars, RRATs and FRBs I: System description and overview*”, [2020MNRAS.492.4752V](#)
- Andreoni, I., ..., **Farah, W.** et al. 2020, “*Probing the extragalactic fast transient sky at minute timescales with DECAM*”, [2020MNRAS.491.5852A](#)
- Lower, M. E., ..., **Farah, W.** et al. 2019, “*Detection of a Glitch in PSR J0908–4913 by UTMOST*”, [2019RNAAS...3..192L](#)
- Kumar, P., ..., **Farah, W.** et al. 2019, “*Faint repetitions from a bright Fast Radio Source*”, [2019ApJ...887L..30K](#)
- Agarwal, D., ..., **Farah, W.** et al. 2019 “*A fast radio burst in the direction of the Virgo Cluster*”, [2019MNRAS.490....1A](#)
- Bannister, K. W., ..., **Farah, W.** et al., 2019 “*A single fast radio burst localized to a massive galaxy at cosmological distance*”, [2019Sci...365..565B](#)
- Price, D., C., ..., **Farah, W.** et al., 2019 “*A fast radio burst with frequency-dependent polarization detected during Breakthrough Listen observations*”, [2019MNRAS.486.3636P](#)
- Jankowski, F., ..., **Farah, W.** et al., 2018 “*The UTMOST pulsar timing programme I: overview and first results*”, [2019MNRAS.484.3691J](#)
- Myers, B. W., ..., **Farah, W.** et al., 2018 “*Hunting for Radio Emission from the Intermittent Pulsar J1107-5907 at Low Frequencies*”, [2018ApJ...869..134M](#)
- Lower, Marcus, E. **Farah, W.** et al., 2018 “*Detection of a glitch in the pulsar J1709–4429*”, [2018RNAAS...2c.139L](#)
- Caleb, M., ..., **Farah, W.** et al., 2018 “*The SURvey for Pulsars and Extragalactic Radio Bursts - III. Polarization properties of FRBs 160102 and 151230*”, [2018MNRAS.478.2046C](#)
- Andreoni, I., ..., **Farah, W.** et al., 2017 “*Follow Up of GW170817 and Its Electromagnetic Counterpart by Australian-Led Observing Programmes*”, [2017PASA...34...69A](#)

- Bailes, M., ..., **Farah, W.** et al., 2017 “*The UTMOST: A Hybrid Digital Signal Processor Transforms the Molonglo Observatory Synthesis Telescope*”, [2017PASA...34...45B](#)
- Caleb, M., ..., **Farah, W.** et al., 2017 “*The first interferometric detections of fast radio bursts*”, [2017MNRAS.468.3746C](#)
- Gebran, M., **Farah, W.** et al., 2016 “*A new method for the inversion of atmospheric parameters of A/Am stars*”, [2016A&A...589A..83G](#)