

# MARC ONG

[www.marcong.org](http://www.marcong.org)

## WORK AND RESEARCH EXPERIENCE

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### Engineer, Preferred Networks

Dec 2019—present

- Implements graph neural network algorithms for chemical property prediction
- Employs machine learning and molecular dynamics to explore transport phenomena in materials
- Devises solutions for generation and augmentation of training data

### Research Assistant, Computational Materials Lab, CSULA

Aug 2017—May 2019

- Applied genetic algorithms to predict crystal structures of materials
- Utilized *ab initio* and machine learning methods to analyze materials for photovoltaics and catalysis
- Wrote papers for publication in academic journals
- Organized and instructed workshops for programming and machine learning

### Intern, National Institute for Materials Science (Japan)

May 2017—Aug 2017

- Conducted experiments on charge transport in perovskite solar cells
- Analyzed experimental data to understand degradation processes
- Created scripts for model fitting of solar cell impedance measurements

### Research Assistant, Photovoltaics Lab, CSULA

May 2016—May 2017

- Conducted experiments to build and characterize materials for perovskite photovoltaics
- Performed general laboratory techniques for the assembly of solar cells
- Performed measurements of photovoltaic efficiency and charge transport

## SKILLS

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### Computer Software and Programming Languages

- Python (numpy, pandas, scikit-learn) for scientific computing and data analysis
- PyTorch for implementing and developing deep learning algorithms
- Docker for ensuring reproducible model training on Kubernetes clusters
- Git and GitHub for version control in software development
- GNU/Linux systems and shell scripting with bash + GNU coreutils

### Research and Collaborative Abilities

- Technical communication (conference presentations, instructing programming workshops)
- Interdisciplinary collaboration with team members and other research groups
- Project management for scientific research
- Technical writing for journal publications

## EDUCATION

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### Georgia Institute of Technology (Georgia Tech)

Jan 2020—present

- Master of Science in Computer Science (online, part-time, expected 2022)

### California State University, Los Angeles (CSULA)

Sep 2014—May 2019

- Bachelor of Science in Physics, Minor in Mathematics (summa cum laude)

## ARTICLES

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### Journal Articles (peer-reviewed)

- M. Ong, D. Guzman, Q. Campbell, I. Dabo, and R. A. Jishi, BaZrSe<sub>3</sub>: *Ab initio* study of anion substitution for bandgap tuning in a chalcogenide material. *J. Appl. Phys.* **125**, 235702 (2019). Recipient of Editor's Pick award.
- M. Ong, Q. Campbell, I. Dabo, and R. A. Jishi, First-principles investigation of BiVO<sub>3</sub> for thermochemical water splitting. *Int. J. Hydrog. Energy.* **44**, 1425–1430 (2019).
- M. Ong, M. Hammouri, and R. A. Jishi, Ab-initio study of optoelectronic and magnetic properties of ternary chromium chalcogenides. *Adv. Mater. Sci. Eng.* **2018**, 3762451 (2018).

### Conference Abstracts

- M. Ong, Q. Liu, A. Lopez, X. Wang, D. Jiang, and F. Zhou, Impact of monolayer of alkyl amine on the crystalline orientation and performance of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> solar cells. *Abstr. Pap. Am. Chem. Soc.* **253** (2017).

## FELLOWSHIPS

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### Undergraduate Student Fellowship, National Science Foundation (USA)

Funded by the Partnership for Research and Education in Materials

## AWARDS

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Summa Cum Laude upon graduation

Dean's List (2015—2019)

Nomination by Golden Key Honor Society

Nomination by National Society of Leadership and Success

Nomination by Phi Kappa Phi Honor Society

## MISCELLANEOUS

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### Event Coordinator, American Red Cross, CSULA

Sep 2016—present

- Organizes CPR training and events to raise awareness for disaster preparedness among university students