

# Jeremy Marquardt

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## Education

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### Purdue University

Candidate for Honors B.S. in Nuclear Engineering, GPA: 3.89/4.0  
Minor in Mathematics

West Lafayette, Indiana

Expected Graduation: May 2020

## Research Experience

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### Thermal Hydraulic Reactor Safety Laboratory

Machine Learning Applications:

Sep 2019 - Present

- Assessed the viability of using Neural Networks to identify plug bubble interfaces from videos.
- Expecting publication with presentation at a student conference.
- Developed a unsupervised neural network to classify two phase flows.

Image Analysis:

May 2019 - August 2019

- Maintained and debugged MATLAB software for image analysis of plug bubbles
- Produced a design document for changes made to program

Facility Construction:

May 2019 - August 2019

- Assisted in the construction of water-air two phase flow facility
- Gained practical experience in experiment measurement and design

### Summer Undergraduate Research Fellowship May 2018 - August 2018

- Developed a citable, open source tool for materials analysis
- Conducted standard research practices, such as Literature Search and Review
- Authored an abstract that was published in Purdue's Journal of Undergraduate Research
- Produced a poster to explain the purpose and use of tool
- Presented at a research symposium with aforementioned poster

### Honors Contract Research Experiences

- Verified the validity of mathematical models  
Utilized contemporary software, such as SRIM and Kalypso to verify the accuracy of mathematical models for sputtering yields
- Operated nanoindenter to evaluate the hardness of inconel 718

## Leadership

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- Purdue University - **Secretary** of Fusion Awareness Club Sep 2019 - Present
- Organized meetings to increase awareness of nuclear fusion
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- Purdue University - **Media Chair** for Purdue's American Nuclear Society Sep 2018 - Present
- Publicized Nuclear Engineering news and club events to increase public involvement with Nuclear Engineering
  - Administered club activities through democratic decisions.

## Publications

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Jeremy Marquardt, Xiaorong Cai, and Marisol Koslowski, "Grain Boundary Motion Analysis" (August 2, 2018). *The Summer Undergraduate Research Fellowship (SURF) Symposium*. Paper 104.

## Skills

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Equipment Skills: Oscilloscopes, Gas detectors, Scintillators, Arduino, Raspberry PI  
General Computer Skills: Microsoft Office (Word and Excel), Unix  
Programming Languages: Python, MATLAB, Fortran, C, Java, Javascript, Paraview, LaTeX, Creo  
Languages: Conversational in German and Japanese

## Work Experience

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- Purdue University - **Grader** January 2020 - May 2020
- Evaluated Homeworks and Exams
  - Assisted students with content comprehension during office hours
- Kroger Company, Newport - **Grocer** June 2017 - Aug 2017
- Performed logistics for customer focused product displays.

## Awards

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- Dean's List and Semester Honors Sep 2016 - May 2018