

# LIAM PACKER

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## WORK EXPERIENCE

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### Johns Hopkins University Applied Physics Laboratory

Jun 2020–Present

*Data Scientist, Algorithm Developer*

*Laurel, MD*

- Applying modern machine learning techniques to scientific problems in heliophysics and spectroscopy.
- Co-I and PI of multiple R&D efforts, funding ranging from \$5k-\$5m.
- Full-stack software design and architecting for processing and analysis systems for Parker Solar Probe, MRO's CRISM, and other internal efforts.
- Performed fundamental research on uncertainty estimation for deep learning models.
- Formulated and implemented solutions to a real-time sensor planning optimization problems.
- Contributed to building and testing a low SWaP fiber-optic mode-locked laser for exoplanet detection.
- Developed high-performance C++(17) image processing libraries for real-time state estimation.
- Full-stack development for process and visualizing real-time tracking and data fusion.

### Swarthmore College

Jun 2018–Aug 2019

*Undergraduate Research Fellow*

*Swarthmore, PA*

- *Jamming of Granular Materials in a Pin Lattice (2019)* Advisor: Amy Graves
- *Predicting Cluster Memory Usage for Adaptive Network RAM (2018)* Advisor: Tia Newhall

## EDUCATION

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### Johns Hopkins University Baltimore MD

May 2021–Present

*Master of Science - Applied Physics (Ongoing)*

**GPA: 4.0**

- **Coursework:** Statistical Mechanics, Sensors and Sensor Systems, General Relativity, Chaos and its Applications, Analytical Dynamics

### Swarthmore College Swarthmore PA

Aug 2016–May 2020

*Bachelor of Arts - Double Major with High Honors in Mathematics and Physics*

**GPA: 3.8**

- **Coursework** (Relevant): Electrodynamics, Analytical Dynamics, Quantum Theory, Statistical Mechanics, Biophysics, Point-Set & Algebraic Topology, Analysis on Manifolds & Measure Theory, Modern Algebra II, Programming Language Theory, Algorithms

## TECHNICAL PROFICIENCIES

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### Computer Languages

C++, Python, Julia, C, Scheme, Racket, IDL, Java, OCaml, CUDA, Bash

### Mathematical Computing

Maxima, Mathematica,  $\LaTeX$ , IDL, Matlab, R

### Software & Frameworks

Linux, Pytorch, Scikit-Learn, ReactJS, Pandas, Emacs

### Tooling & Build Systems

Git, Docker, Tmux, Maven, Make, CMake, Dune

### Languages

Japanese & Spanish (limited working proficiency)

## EXTRACURRICULAR

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- Notorious textbook hoarder, including classics from Whittaker (1904), Weyl (1931), Synge & Griffith (1942), and Panofsky & Phillips (1955).
- Classically trained flutist since 2004.
- Avid climber, mainly bouldering.