

David Pitt

Seeking roles in ML engineering and operations

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EDUCATION

- **Harvey Mudd College** Claremont, CA
B.S., Math and Computer Science - in-major GPA 3.9 Aug 2019 - May 2023 Ex.

Relevant coursework: Stochastic Processes (graduate-level), Advanced Linear Algebra, Geometry of Big Data, Mathematics of Big Data, Intermediate Probability & Stats, Applied Algebraic Topology, PDEs, Dynamics, Artificial Intelligence, Computability and Logic, Data Structures & Algorithms, Object-Oriented Programming
 - **Math 157 head grader:** Graded all assignments for upper-division probability theory course.
 - **CS5 grader/tutor:** Graded assignments and held weekly TA sessions for advanced intro computer science course.
 - **Community involvement:** Co-founder of HMC Chess, member of Engineers for a Sustainable World

EXPERIENCE

- **Groundlight AI** Seattle, WA / Remote
ML Engineer (part-time) Sept 2022 - Dec 2022
 - **OOD detection:** Building tools to detect out-of-distribution anomalies in training pipeline.
 - **ML codebase:** Developing features and improving usability of Groundlight's internal machine learning library.
- **Proofpoint** Claremont, CA
Consulting mathematician Aug 2022 - present
 - **Adversarial attacks:** Modularizing a library for testing adversarial attacks on large language models.
- **Groundlight AI** Seattle, WA
Applied Science Intern May 2022 - Aug 2022
 - **Model tuning:** Implemented search strategies from literature for optimizing hyperparameters of ML models in vision pipeline. Designed and developed a model-agnostic cost-sensitive calibration framework. **Decreased calibration error in production by 21%.**
 - **Science:** Developed and trained new domain-specific feature extractors using self-supervised learning. Explored a novel method for anomaly detection in video. Refreshed internal techwiki, added mathematical proofs. Led paper-reading journal club meetings, presented NIPS/CVPR papers to an audience of engineers and scientists.
 - **DevOps:** Automated end-to-end model testing workflows in production API.
- **Inspirit AI** Remote
Instructor May 2022 - present
 - **Teaching AI:** Led nightly sessions of a Python-based AI course for high school students.
- **Granite Point Capital** Boston, MA
Equity Research Analyst May 2021 - Aug 2021
 - **Equity research:** Led a team of interns to cover 20 digital digital currency and renewable energy companies, used fundamental modeling to deliver investment theses to management
 - **Trade analytics package:** Independently designed and built a lightweight framework to allow PMs to analyze trade flow using prime broker data logs. Used to investigate quality of deal stock sold by smaller brokers.
- **Nanotronics Imaging** New York
Junior R&D Associate Jun 2020 - Aug 2020
 - **Image preprocessing:** Implemented a U-net in Tensorflow to correct an artifact of high-res microscopy for use downstream in computer vision pipeline.

PROJECTS

- **Fractal animator:** Designed tools to visualize and animate ultra-high-resolution animations of dynamical system end behavior. Uses parallelization to render and save to disk orders of magnitude faster than previous tools.
- **Chaotic Encryption:** Designed my own encryption scheme based on chaotic behavior to encode text and image data.
- **N-body Simulator:** Designed my own numerical integrator to simulate solutions to arbitrary N-body problems with initial conditions.

HONORS AND AWARDS

- **ECCV 2022 Out-of-distribution pose estimation challenge:** Runner-up
- **Harvey S. Mudd Scholarship:** Tuition award for academic achievement

TOOLS & TECHNOLOGIES

- **Languages:** Python, C++, SQL, Bash, Java, Maple
- **Frameworks:** NumPy, Pandas, scikit-learn, OpenCV, NLTK, Pytorch, Pytorch-Geometric, Tensorflow, Keras, WandB
- **Tools:** Linux, Git, Docker, GitHub Actions, DVC, MySQL, Neo4j
- **Communication:** English (native), Mandarin Chinese (business proficient)