David Pitt

Seeking roles in applied science, R&D and engineering

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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*
  - **Honors and awards**: Harvey S. Mudd Scholarship, Dean's list every semester.
  - **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** — Seattle
  Applied Science Intern — *May 2022 - present*
  - **Hyperparameter tuning**: Implemented new search strategies for calibrating ML models in pipeline.
- **Inspirit AI** — Remote
  Instructor — *May 2022 - present*
  - **Teaching AI**: Lead daily sessions of a Python-based AI course for high school students.
- **Granite Point Capital** — Boston
  Equity Research Analyst — *May 2021 - Aug 2021*
  - **Equity research**: Led a team of interns to cover 20+ blockchain/digital currency companies and use fundamental tools to deliver investment theses to management
  - **Independent - trade analytics**: Developed a lightweight framework for analyzing trade flow using prime broker's data. PMs still use it to evaluate broker performance.
- **HMC Bee Lab** — Claremont
  Researcher — *Jan 2021 - May 2021*
  - **Parameter testing**: Ran large parameter sweeps on a coupled ODE model of ant traffic networks from literature to find parameters that created behavior consistent with ground truth.
- **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 CV pipeline.
  - **Classical computer vision**: Implemented image segmentation/stitching to preprocess another imaging artifact.
- **Harvey Mudd College** — Claremont
  Machine Learning Intern — *Feb 2020 - May 2020*
  - **ML course**: Updated a spring lecture series on machine learning topics in Python for students at the Claremont College Consortium.
  - **Coursera administrator**: Designed and oversaw a free Coursera program for students during the first months of the pandemic, with 40% of students enrolling.

Projects

- **Graph neural network for EEG data processing**: (Work in progress) Researching and developing a graph-attention-based approach that structures EEG signals as dynamic networks. Implementing on a series of public EEG datasets.
- **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 intial conditions.

Tools & Technologies

- **Languages**: Python, C++, SQL, Bash, Java, Maple
- **Frameworks**: NumPy, Pandas, Scikit, NLTK, Poetry, Pytorch, Pytorch-Geometric, Tensorflow, Keras, WandB, Networkx
- **Tools**: Git, DVC, MySQL, Neo4j
- **Communication**: English (native), Mandarin Chinese (business proficient)