DYLAN JACOBS

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EDUCATION

Swarthmore College Philadelphia, PA Aug 2023—June 2027
Bachelor of Science in General Engineering & Bachelor of Arts in Applied Mathematics
Relevant Coursework:
- Electrical circuit analysis, data structures & algorithms
- Ordinary & partial differential equations, mechanics

Overall GPA: 4.0/4.0

COMPUTER SKILLS

Programming Languages: Python, MATLAB, Java, C++, C#, Kotlin
Software: VSCode, MATLAB, Git, SolidWorks, AutoCAD, MS Office
Foreign Languages: Spanish (Fluent)

RESEARCH AND INTERNSHIP EXPERIENCE

Swarthmore College Mathematics Department Swarthmore, PA
Computational Fluid Dynamics (CFD) Research Assistant Jan 2024-present
- Utilizing principles of CFD and numerical methods to research high-order accuracy approximation algorithms of time-dependent partial differential equation (PDE) plasma and kinetic models.
- Gained experience using MATLAB to implement PDE-solvers, including classes of Runge-Kutta and implicit-explicit methods; presented research results at Swarthmore Sigma Xi poster session.
- Developing novel low-rank, structure-preserving, highly accurate method for the Vlasov-Fokker-Planck equation in cylindrical coordinates; wrote 10000+ lines MATLAB, 1000+ LaTeX lines of code

Swarthmore College Engineering Department Swarthmore, PA
Electrical Engineering Research Assistant Dec 2023—2024
- Researched electrical and aerospace science behind oscillatory wind-energy devices to develop a novel, small-scale wind-energy harvester.
- Used MATLAB and Arduino to record and analyze voltage data from electromagnetic induction.
- Wrote over 300 lines of MATLAB and Arduino code; gained experience using ViscousFlow.

Oregon Health and Science University Portland, OR
Software Engineering Summer Intern Jun 2022—Aug 2022
- Developed mobile Android app in Kotlin, writing over 1000 lines of code
- Attended and presented weekly project updates and machine learning meetings; presented machine-learning paper to reading group.

Oregon Health and Science University Portland, OR
Data Analyst Intern Jan 2021—Jun 2021
- Used statistical models in Python to predict the time and date of female patient parturition.
- Attended weekly machine-learning presentations.

PROJECTS

AI Python Stock Trading Algorithms, Algorithm development project, link Mar 2022—Feb 2023
- Created Python algorithms to trade stocks based on various quantitative metrics.
- Gained experience in Python, artificial intelligence, automated decision making.
- Learned about and implemented various automated stock trading algorithms.

Generative Adversarial Network (GAN), Machine-learning project, link Mar 2022—Feb 2023
- Implemented Python AI algorithm—trained on abstract art datasets—to create original computer-generated abstract artwork.
- Gained experience in Python machine-learning, artificial intelligence, realistic image generation.

FireSale, Mobile Android app development project, link Aug 2020—Jun 2021
- Used Java and AWS to develop Android app to simultaneously reduce food waste and hunger.
- Gained experience in Java, AWS backend system, user authentication, app development.

EXTRA-CURRICULARS

Swarthmore Men's Varsity Soccer Aug 2023—present
Swarthmore College Computer Society Jan 2024—present
- Collaborated with peers to develop carpool website using Typescript and Node.js

HONORS

Donna Prentice Memorial Scholarship, American Society of Civil Engineers Feb 2024