Artemis Anna Pados

Curriculum Vitae

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Briefly Stated Objective

I am a senior in EECS at MIT. My long-term objective is to pursue PhD studies in an intersection of Computer Science, Electrical Engineering, and Mathematics involving machine learning, data analytics, and information theory and perhaps attempt an academic career thereafter.

Academic Preparation

Fall 2022-Present **Massachusetts Institute of Technology**, *Cambridge, MA*, **(GPA: 5.0/5.0)**

- B.S. in Electrical Engineering and Computer Science (Course 6-2) expected May 2026
- Teaching Assistant, 18.C06 Linear Algebra and Optimization, 8.02 Physics II: Electricity and Magnetism
- HKN Honor Society EECS Tutor
- MIT Varsity Women's Tennis Team

Summer 2021 **Stanford University**, *Stanford, CA*

- MATH 51 Linear Algebra, Multivariate Calculus, and Modern Applications (**Grade A**)

2018-2022 **Stanford Online High School**, *Stanford, CA* **(GPA: 3.9/4.0; weighted 4.34/4.0)**

2015-2017 **University at Buffalo, SUNY**, *Buffalo, NY*, **(GPA: 4.0/4.0)**

- University courses: GSE 120 LEC Logic and GSE 121 LEC Logic and Sets (through UB Gifted Math Program)

Research Experience

June 2025–Present **Research Intern**, Numerical Algorithms and High-Performance Computing (ANCHP) Group, École Polytechnique Fédérale de Lausanne (EPFL), Prof. Daniel Kressner

- Topic: Numerical linear algebra, random matrices, and structure-exploiting methods for low-rank matrix approximation and joint diagonalization, with applications in multimodal data analysis and spectral clustering.
- Awarded funding from the MIT International Science and Technology Initiatives (MISTI) program.

June 2023-Present **UROP (Undergraduate Research Opportunity Program)**, Network Coding and Reliable Communications Group, Prof. Muriel Medard

- Topic: Algorithmic developments and theoretical performance analysis for decoding algorithms such as GRAND and variants, optimal guesswork, bias detection, and estimation of discrete probability distributions

Spring 2023 **Independent Research**, with Florida Atlantic University EECS PhD student collaborator

- Topic: Singular-vector decomposition by deep-neural-network means

Summer 2021 **NSF REU program, Institute for Sensing and Embedded Network Systems Engineering (I-SENSE), Florida Atlantic University (FAU)**, *Boca Raton, FL*

- Topic: Infrastructure Systems - Mobility Sensing and Analytics for Smart Cities
- Advisor: Dr. Jason Hallstrom, Director of I-SENSE, Professor of Electrical Eng. & Computer Science

Summer 2021 **Summer Research, Florida International University (FIU)**, *Miami, FL*

- Topic: Natural Language Document Processing for the US Patent and Trademark Office
- Advisor: Dr. Mark Finlayson, Professor and Eminent Scholar, School of Computing and Information Sciences, FIU

Academic Enrichment

Fall 2024 **Undergraduate Teaching Assistant in Linear Algebra and Optimization**

- Teach two hour-long recitations twice per week, hold office hours, grade exams

Fall 2024 **HKN EECS Certified Tutor**

- Member of HKN EECS honors society by being in top fourth of grade by GPA, certified HKN tutor undergrads in select EECS courses

Spring 2023 **Undergraduate Teaching Assistant in Physics II: Electricity and Magnetism**

- In-class lecture and problem solving assistance, 4 hrs/week

Jan 2023 **Gridspace X IAP Educational Program on NLP**

- Month-long series of educational talks and enriching exercises to learn production-standard speech technology (linguistics and language models) from LA startup Gridspace

Summer 2020 **Harvard University Pre-College Summer School**, *Cambridge, MA*

- "Introduction to Programming, Computational Science, and Data Visualization" using Python

2018-2022 **Member of the Girls Can Code Club**, **Women in STEM+ Club**, and **Athletics Club**, *Stanford Online Highschool*

Summer 2018 **Summer at Stanford University**, *Stanford, CA*

- One-week intensive courses: "Computational Thinking in Mathematics and Beyond using Wolfram language" and "Approaching Infinity"

2015-2017 **University at Buffalo, SUNY, Gifted Math Program (GMP)**, *Buffalo, NY*

- Select group of 60 students from pool of highest achieving middle/high school students in Western NY
- GMP 1 (2015-2016): Advanced Algebra, Geometry, Probability
- GMP 2 (2016-2017): Set theory, Basic Number theory, Groups, Relational Systems, Logic, and Proofs

Publications

[1] Nathan Hurtig, Maren Sorber, Artemis Pados, and Jason O. Hallstrom. "Temporal stability of RSSI as a pedestrian localization metric," in *Proceedings of ACM Southeast Conference*, April 2022, pp. 159–166. https://doi.org/10.1145/3476883.3520206

- Abstract: As wireless sensor network (WSN) technology advances, more practical applications become possible. One important application involves mobility analytics. Data concerning how people move in urban environments can inform city planners and businesses to support improved decision-making. Numerous studies have been conducted on pedestrian localization using the received signal strength index (RSSI) of mobile device WiFi probe requests. However, these studies were only conducted over the span of days. Since a real-world WSN requires long-term, reliable accuracy, further experimentation is required to determine whether accuracy is maintained over time. We evaluate the long-term viability of RSSI as a localization metric through an analysis of experimental results using a robotic testbed platform.

[2] Artemis Pados, "The Dynamic Republic," in *Proceedings 3rd Harvard-Japan International Young Researcher's Conference (IYRC)*, Sept. 2020, pp. 162-164.

- Abstract: The ancient Greek philosopher, Plato, writes in Book IV of "The Republic" that there are three parts to the human soul – "appetite, spirit, and wisdom"- and these categories directly translate to how an ideal state/society should be run. In this research paper, I argue that there are two main flaws with Plato's ideal city structure and I explain how these flaws may be rectified.
- View/download paper

Conference Presentations

[1] Artemis Pados, "The Dynamic Republic," *3rd Harvard-Japan International Youth Researcher's Conference (IYRC)*, Sept. 19-20, 2020.

- Watch my presentation

Robotics Portfolio

Spring 2025 **Robotics Portfolio**, *6.4200 Robotics: Science and Systems, MIT*

- I developed full-stack autonomous navigation solutions (wall fallowing, visual servoing, localization, path planning, path following, etc.) with my team in simulation and on a physical racecar using ROS2. We competed against other teams to complete challenges and presented our work with panel-led briefings and technical papers.
- View work on team website

Lattice Point Geometry/Discrete Math Problem Portfolio

May 2021 **"Exercise Portfolio"**, *Lattice-Point Geometry, Discrete Math, Stanford Online Highschool*

- During "University Discrete Mathematics" and "University Lattice-Point Geometry" high school courses (each semester long), I created a LaTeX portfolio with exercises, derivations, and proofs that I completed exploring the algebraic structure of the lattice plane, Pick's, Blichfeldt's, and Minkowski's Theorems, as well as concepts of number theory, linear algebra, and graph theory.
- View/download portfolio

Sample Academic Distinctions

2024-2025 **College Sports Communicators (CSC) Academic All-American**

- 9th student athlete in MIT program history to receive this award.
- From the Academic All-District honorees, 18 student-athletes are selected as Academic All-Americans.

2024-2025 **College Sports Communicators (CSC) Academic All-District**

- Award recognizes top upperclassman student-athletes who excel in both academic and athletic performance nation-wide.

2025 **NEWMAC Conference All-Academic Team**

2024 - Present **HKN EECS Honor Society**, in top fourth of grade by GPA in EECS at MIT

2024 **NEWMAC Conference All-Academic Team**

2023 **NEWMAC Conference All-Academic Team**

2023 **ITA (Intercollegiate Tennis Association) Scholar Athlete**, GPA 5.0/5.0

2023 **ITA (Intercollegiate Tennis Association) All-Academic Team**

Fall 2020 **SAT Score 1530 (800 Math, 730 English)**

2016-2017 **GSE 120 LEC Logic and GSE 121 LEC Logic and Sets**, *SUNY Buffalo (UB)*, GPA 4.0/4.0

Summer 2021 **MATH51 Linear Algebra, Multivariate Calculus, and Modern Applications**, *Stanford University*, GPA 4.0/4.0

2010-2015 **National French Language Contest (Concours National de Français)**: Placed 4th, 3rd, and 2nd in the country, American Association of Teachers of French (AATF)

Computer Skills

- Python
- C++
- C
- Assembly Language
- Keras/Tensorflow
- LaTeX
- ROS2
- RViz
- Wolfram Language
- Julia
- R
- Java
- Matlab
- PyTorch
- Linux/Bash
- Docker

Languages

- English (native)
- Greek (fluent)
- French (proficient)

Select Courses

6.4200 Robotics: Science and Systems, *MIT*
- In progress

6.3000 Signal Processing, *MIT*
- In progress

18.065 Matrix Methods, *MIT*
- In progress

6.310 Dynamic System Modeling and Control Design, *MIT*
- Grade A

18.05 Probability and Statistics, *MIT*
- Grade A

18.C06 Linear Algebra and Optimization, *MIT*
- Grade A

6.120A Discrete Math and Proofs for Computer Science, *MIT*
- Grade A+

8.01 Classical Mechanics, *MIT*
- Grade A

8.02 Electricity and Magnetism, *MIT*
- Grade A

6.100A Programming in Python, *MIT*
- Grade A

Programming in C++, *Stanford Online Highschool*
- Grade A

Discrete Mathematics Proof-based University course, *Stanford Online Highschool*
- Grade A

Lattice Point Geometry Proof-based University course, *Stanford Online Highschool*
- Grade A

AP Computer Science in Java, *Stanford Online Highschool*
- Grade A

Logic University course, *Stanford Online Highschool*
- Grade A

Number Theory University course, *Stanford Online Highschool*
- Grade A

Sample Writing in Philosophy of Science

Spring 2020 (Grade 10)

"In Support of Mathematical Platonism", *History and Philosphy of Science course, Stanford Online Highschool*

- This is a research paper in support of a Platonist view of Mathematics. I define Mathematical Platonism against its close alternatives and analyze the underlying theses of its definition. I explore the assumptions, foundations, and implications of mathematics, how they affect one's larger metaphysics, and attempt to address the age-old question of whether abstract objects exist. I investigate the views that counter Platonism, canvassing Intuitionism as it relates to the discussion, and finally attempt to refute the counterclaims using Fregean techniques.
- View/download paper

Fall 2019 (Grade 10) **"In Search of 'That Which Has No Part' "**, *History and Philosphy of Science course, Stanford Online Highschool*

- View/download paper

Volunteer Work/Community Engagement

Fall 2022- Present **Mentor at Symbiotic STEM**, *Cambridge, MA*

- Mentor for middle and high school students with STEM interests: Program aims to improve diversity and inclusion in STEM

Summer 2020 **Little Me Academy High School**, *Cagayan de Oro, Philippines*

- Taught 10th Grade math live via Zoom to high school class amidst the coronavirus pandemic

Summer 2020 **Tutoring university students at Florida Atlantic University (FAU)**, *Boca Raton, FL*

- Tutored underprivileged university students via Zoom in Calculus 1 and 2 amidst the coronavirus pandemic

Spring 2020 **Assembled 400 disposable face shields for the Memorial Healthcare System of South Florida**, *Boca Raton, FL*

- Participated as a volunteer in the FAU effort to produce 16,500 disposable face shields for local hospitals and medical practices

Sports

Played tennis sectionally, nationally, and internationally; reached career high international ranking (ITF) #639; ranked #77 (4-star recruit) in U.S. in high school graduating class.

2022- Present **MIT Varsity Women's Tennis**, *Cambridge, MA*

- Competition in NEWMAC conference and NCAA level

2017-2022 **Evert Tennis Academy**, *Boca Raton, FL*