Micky D. Santiago-Zayas

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Website: mdsantia.github.io/ | **GitHub:** github.com/mdsantia/ | **LinkedIn:** Micky Santiago-Zayas

Academic Background

Purdue University; West Lafayette, Indiana	**July 2020 – May 2024**
BS in Mathematics and Computer Science	**3.59 GPA**

Academic Projects

- **RoadRunners Self Start Website Project** — **Aug 2023 – Current**

  Developed a React Interactive website, along with an incredible team, utilizing a NodeJS server and a MongoDB database. The goal is to allow novice road trip enthusiasts to plan their road trip ideas without the need of extensive research and effort. Building a server that can suggest personalized travel plans while allowing customizability. Mainly worked on implementing the server with integrated the database access and API calls to Google Maps, vehicle information, gas information, among others.

- **ScheduleSwift Self Start Website Project** — **Aug 2022 – Jan 2023**

  Developed a React Interactive website, along with an incredible team, utilizing a NodeJS server and a MySQL database. The goal was to allow businesses personalize private websites and for their customers to create and manage reservations with a simple user interface while managing business information and employees in one incorporated system. Mainly altering HTML, CSS, and JavaScript code.

- **Louis Stokes Alliance Minority Program** — **June 2022 – Aug 2022**

  Weekly discussions and presentations of scientific papers aimed at sharing a diverse range of research topics with an audience comprising research individuals from various scientific disciplines.

- **Compiler Projects** — **June 2022 – May 2023**

  Built a x86-64 Assembly compiler for C files through a C executable that reads tokenizes words converting one line at a time.

  Built an ARM Assembly compiler for a simplified Java language structure files through a C executable that type checks first and builds an Abstract Syntax Tree.

- **Data Study on Temperature Inversions** — **Jan 2022 – May 2022**

  Data management from Purdue Mesonet's database to analyze temperature inversion frequency to better predict future inversions that could affect agriculture. Data analysis was performed through R commands for tabular data management.

Professional Experience

- **Differential Equations Teaching Assistant** — **Aug 2022 – May 2024**

  Teach weekly sections for problem solving techniques with differential equation software tools while personally interacting with student questions and activities. Discussing potential solutions that allow the students to think critically, solving a wide range of applicable problems of estimation in the real world.

- **Union Rack & Roll Student Manager** — **Jan 2022 – Aug 2024**

  Proactively solved mechanical and management issues with pinsetter machines and event planning. Frequently encountered new issues that required analysis and creativity to resolve, mostly mechanical, to rearrange customers for troubleshooting pin machines. Designed software to improve employee and customer experience.

- **Research and Conference Speaker** — **Aug 2019 – Current**

  Speaker in research events to a wide range audience for mathematical discussion. Some examples include LSAMP 2022 Summer Conference, Purdue 2022 Undergraduate Conference, Math Undergrad Presentation Night 2023, and RIPS Projects Day 2023.

- **Emerging Leaders Science Scholar Mentor**   **Aug 2021 – May 2022**

    Lead three incredible freshmen in Mathematical fields to improve and adapt socially and academically to college life as members of minority groups in a small yet important academic field.

Research Experience

- **Alternative Artificial Intelligence**   **June 2023 – Aug 2023**

    Team project in the Research of Industrial Projects for Students to build an alternative artificial intelligence framework that can recreate human. Also trained neural networks that could recreate the behavior of our alternative algorithm. These methods were also run in Nvidia's Omniverse for Digital Twin machine learning. Mainly worked on Python and LaTex documentation.

- **Random Walks of Almost Leinert Sets**   **June 2022 – Sep 2022**

    With Dr. Thomas Sinclair's NSF's grant, we expanded and estimated random walk studies to generalize results to different path dimensions that are semi-commutable to better represent the probability of returning to the starting point through MATLAB code and algebraic analysis.