Nathanael Lu

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EDUCATION

Michigan State University Honors College   East Lansing, MI

BS in Computer Science, *Minor in Mathematics*, *Cumulative GPA: 3.93/4.00*   *Expected Graduation: Spring 2027*

SKILLS

Programming Languages: C++, Python, Javascript, Typescript, HTML, CSS, R, SQL

Technologies: Git, React.js, Next.js, Node.js, Firebase, Redis, Tailwind, Expo, Docker, Neptune.ai

PROGRAMMING PROJECTS

Neurosity Crown (Javascript, React Native, Expo, Node.js, Firebase)   *October 2023 – Present*
- Developed an innovative AI-based EEG analysis tool utilizing Neurosity Crown; architected and implemented a React Native mobile application with a sleek Figma UI, integrating Expo frameworks and Firebase for robust authentication mechanisms.
- Applied data science principles to build and train a predictive machine learning algorithm, enhancing content personalization for Netflix users through data analysis, algorithm optimization, and leveraging neural networks for increased accuracy.
- Demonstrated proficiency in Agile software development practices, ensuring efficient project management following a strict timeline within collaborative, cross-disciplinary teams, and employing Scrum methodologies to meet project deliverables.

Optiver Kaggle (Python, Tensorflow, Pandas)   *October 2023 – November 2023*
- Directed a team in a Kaggle machine learning challenge, employing collaborative tools like GitHub and Jupyter Notebooks to develop an ensemble of models with TensorFlow; achieved high accuracy predictions and a respectable placement.
- Advanced predictive modeling through hyperparameter optimization using Optuna and Neptune.ai, and leveraged Pandas for sophisticated data manipulation, resulting in enhanced feature engineering and model performance.

Liravis (C++, libPCL, Git, LiDAR, Python, ROS2)   *October 2023 – Present*
- Orchestrated a collaborative initiative between the AI Club and Autonomous Vehicles Club to develop an open-source library fusing LiDAR, Radar, and Computer Vision for enhanced autonomous navigation, doubling the analytical capability.
- Managed 10 students in the deployment of advanced computer vision algorithms for precise traffic sign recognition and real-time vehicle localization, elevating the project to a benchmark for safety and efficiency in autonomous vehicle research.
- Unified efforts of three development teams using C++20 and modular programming techniques, resulting in a robust library of tools, and cemented cross-club synergy by sharing knowledge and resources for mutual technological advancement.

Personal Projects (C++, Python)   *March 2023 – Present*
- Created engaging C++ Solitaire video tutorials that simplified complex data structures, achieving over 1000+ viewers—facilitated a deep understanding of complex data structures and algorithms through instructional content creation.
- Programmed an AI-powered Mancala game in C++, utilizing advanced data structures and functional programming techniques, resulting in a strategic game simulation that challenges and outperforms standard heuristics.
- Built a robust chess engine across Python and C++ platforms, integrating bitboards for efficient game state management and combining handcrafted evaluation functions with neural network models for superior AI decision-making capabilities.

INVOLVEMENT

- MSU AI Club - 3x Project Lead   *October 2023 – Present*
- MSU Imagine Software - Project Member   *October 2023 – Present*

EXPERIENCE

Helivox   Troy, MI

Chief HR Officer   *August 2022 – July 2023*
- Strategically established and led the foundational structure of a 100+ member 501(c)(3) multi-district educational nonprofit; spearheaded a large-scale, cost-free SAT simulation initiative that enhanced educational accessibility.
- Played a pivotal role in talent acquisition and development; recruited, onboarded, and provided in-depth training to a 10-person HR team and over 50 top-performing student volunteers, fostering an environment of learning and growth.
- Implemented robust operational procedures, including a streamlined document management system, comprehensive recruitment strategies, and meticulous quarterly reporting, ensuring organizational efficiency and effective conflict resolution.