MATTHEW NILSEN

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY   **Atlanta, GA**
- 3.92 GPA   *Graduation: May 2022*
- Bachelor of Science in Computer Science
- Pathways: Information Internetworks, Artificial Intelligence

JEFFERSON HIGH SCHOOL   **Jefferson, GA**
- 4.0 GPA   *August 2014 – May 2018*
- Commencement Speaker

EXPERIENCE

U.S. DEPARTMENT OF ARMY   *September 2020 – Current*
Fall Intern | Top Secret Clearance
- Led a scalable cloud & machine vision project automating a document submission process, reducing human intervention by 96%
- Increased development team's efficiency by establishing TDD w/ code coverage analysis, unit tests, and E2E tests
- Implemented protothreading and pathfinding on a robotic car with a single CPU microcontroller, allowing it to efficiently navigate a maze using only an ultrasonic sensor
- *Tools: AWS, Python, OpenCV, Angular, TypeScript, Arduino*

SAMETUNES, LLC   *January 2020 – September 2020*
CTO/ Co-Founder (Create-X Startup)
- Led development efforts for a music-based social media startup with that integrates with the Spotify API
- Created a custom API call caching strategy to reduce account creation times by 90%
- Hired and led a team of four developers by enforcing Agile and managing sprints and automating deployment
- *Tools: Linux, Apache, MySQL, PHP, PHPUnit, Shell Scripting*

PROJECTS

TERMINAL C1 GAMES – Top 10 East Coast Regional Competitor   *March 1st, 2021*
AI Programming Game Played by Engineers and Data Scientists
- Implemented a custom Q-learning strategy by discretizing game states and designing heuristic reward function
- Scripted match performance analysis via error logs and replay files to train the algorithm
- Created an abstract architecture that allowed me to easily modify attack/ defense strategies, maintain state for strategies that could execute concurrently, and control an attack queue
- *Tools: Python3, Scikit-learn, Keras*

DUAL-BOOT LAPTOP   *May 2020 - Current*
Increasing my development efficiency & Linux system familiarity
- Replaced default window manager (XFCE) with BSPWM (tiling window manager) to reduce mouse reliance
- Set up chron job to automatically back up dotfiles to a private repo
- Upgraded vim and default shell with plugins (autocompletion, latex compilation, etc.) to decrease reliance on gui programs
- Maintain a drop-by-default config for iptables to increase network security
- *Tools: Windows, Linux, XFCE, IPTables, BSPWM, TCPDump, Vim, Zsh*

ROBOTICS SCOUTING WEB APP   *February 2018 – April 2018*
Used match data to predict future team performance and playoff outcomes
- Successfully designed and completed application while under pressure from strict competition deadline
- Developed a heuristic solution for predicting teams' performance which was 88% accurate
- Integrated RESTful API data and a MySQL database to simplify scouting and improve accuracy
- *Tools: Linux, Apache, MySQL, PHP, Bootstrap 4, jQuery, APIs*

SKILLS/INTERESTS

Leadership: SameTunes CTO, Eagle Scout, 4-H Archery Assistant Coach, Football Defensive Captain
Skills: Backend & Frontend Software Engineering, Cloud Development, Machine Learning, Linux, Networking, and Shell Scripting
Certifications: Google Digital Garage Marketing Certification, LinkedIn Agile Development, LinkedIn Python
Interests: Software Architecture, Securities Analysis, Personal Finance/ Investing, Cloud Computing, Quantum Computing