Markian V. Hromiak

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EDUCATION

Georgia Institute of Technology, Atlanta, GA

- Bachelor of Science in Computer Science   December 2020
Cumulative Major GPA 3.50

- Master of Science in Computer Science, Concentration in Interactive Intelligence   January 2023 – Present

WORK EXPERIENCE

Software Engineer II – Mastercard   **February 2022 – Present**

- Led team knowledge transfer seminars in order to guide a new team on software documentation practices and Spring/Springboot/REST, resulting in a 40% increase in iteration point delivery compared to prior estimates
- Successfully led the hand off of a high-visibility product after taking a role in development and monitoring setup
- Developed a distributed Axon application designed around the publish-subscribe pattern as part of a team effort
- Demonstrated programming flexibility by adapting software design through a core architectural design pivot
- Regularly led functional demonstrations of flagship project progress to both peer department teams and product owners
- Mentored several junior members on various development topics from design patterns to Springboot
- Headed the effort to promote the team's application to a non-dev pre-prod environment using Chef Habitat

Software Engineer I – Mastercard   **February 2021 – Present**

- Elaborated and continuously integrated production features using development tools such as SQL, Splunk, Java, Jenkins and PCF
- Mentored an intern through onboarding, Agile methodology, object-oriented programming principles, cross-team collaboration practices and further company engagement opportunities, resulting in talent acquisition
- Initiated collaboration with senior mentors to expand metrics gathering and analysis across a core plugin architecture
- Created an efficient, open-source, cross-platform acronym dictionary onboarding CLI tool available company-wide as an effort to reduce the amount of time spent searching for acronym definitions
- Documented critical procedures on security certificate creation, billing service encryption and XOM key addition
- Created several Splunk alerts, reports and dashboard for use including product failure tracking, customer statistics gathering and system health metrics
- Rapidly learned development frameworks while working as a member of a geographically distributed team

TITANS Software Engineering Intern – Sandia National Laboratories   **May 2020 – August 2020**

- Designed an application-layer noisy channel module to empirically compare forward error correction implementations
- Constructed a pipeline algorithm for reliable file transfer over an unreliable simplex channel
- Optimized algorithm performance through test-driven development and memory profiling

Teaching Assistant – Georgia Institute of Technology   **August 2019 – December 2019**

- Educated students on object-centered software design principles and version control
- Guided students through application construction following GRASP and SOLID principles
- Taught a seminar on RESTful APIs, HTTP/web service applications and software design principles

Software Engineering Intern – Edward Jones   **May 2019 – August 2019**

- Constructed RESTful, front-end API microservices for an AGILE, multi-platform UI enterprise application
- Collaborated in scrum meetings and AGILE training/research to aid in a firm-wide Waterfall-to-AGILE transition
- Utilized test-driven-development practices to create modular, SOLID code
- Fully integrated features through Jenkins and Kubernetes

PROJECTS

MNIST Custom Neural Network   **Spring 2022**
 • Implemented a multi-layer neural network from scratch in order to approach reinforcement learning mathematically
 • Produced 95% classification accuracy on testing set with 76% accuracy on extrapolated examples

Alpha-Beta Pruning Go Bot   **Spring 2022**
 • Optimized a hybrid Q-learning/α-β pruning algorithm to play Go against q-learning, α-β and greedy algorithm bots
 • Conducted an efficacy analysis of varying α-β methodologies so as to properly scale runtime with available resources

Live Face Blurring   **December 2020**
 • Utilized the OpenCV library to create a face blurring application compatible with live video, recordings and images
 • Contrasted the efficacy and suitability of HOGs, Haas cascades, DNNs and MTCNNs for live computer vision

Stochastic Chess AI   **Fall 2020**
 • Implemented a Monte-Carlo tree search algorithm to optimize a strategy for 'Fog of War' chess
 • Developed in a class team by using a feature-oriented evolutionary programming paradigm

Wasteland Sorting Algorithm   **August 2019 – September 2020**
 • Drafted and tested an original sorting algorithm against standard sorts, showing superior runtime for large data
 • Documented complexity analysis and design procedure using git version control
 • Maintainer for an open-source package on PyPI

DrivingForce App   **January 2018, March 2020**
 • Designed a hackathon web app to host volunteer organization work opportunities
 • Created HTML/CSS interface with Angular5 linked to a Google Firebase database
 • Reworked application in Angular9, improving functionality and UI/UX following Evolutionary Prototyping

PUBLICATIONS

A New Charter of Ethics and Rights of Artificial Consciousness in a Human World
 • Published as arXiv:2010.12019 on arXiv. Primary author, 8/12/2020

SKILLS

Computer Languages, Libraries, and IDEs:
 • Proficient in Python, Java, Bash, Splunk, Springboot, LaTeX
 • Experience with SQL, Prolog, C/C++, Python Flask, Rust, Jenkins, PCF, ODM, Chef Habitat, Docker
 • Worked in IntelliJ, Eclipse, Spyder, TexStudio, VSCode

Relevant Development Skills:
 • Experience working in a multi-environment Agile workflow including development, staging, and production areas
 • Able to apply software patterns and testing paradigms such as singleton, publisher-subscriber, and test/behavior-driven development
 • Experience with helping develop a roadmap of features for several project iterations
 • Can turn a critical eye towards features, creating and elaborating skeleton stories and pruning unnecessary stories
 • Able to quickly learn the minimum needed in new languages and frameworks to deliver MVP

RELEVANT COURSEWORK
 • Artificial Intelligence, Graduate Design & Analysis of Algorithms, Software Engineering, Operating Systems, Robotics & Path Planning, Processor Design, Automata and Complexity, Knowledge Based AI & Cognitive Arch

AWARDS AND HONORS
 • GT Eta Kappa Nu Honor Society member   • Georgia Tech Inventure Prize Competition Semi-Finalist
 • GT 'Make a Difference' Hackathon 2018 – Runner-up • University Physics Competition – silver, bronze medals
 • Georgia Tech Provost Scholar   • IEEE Society Member