Ryan Newkirk

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EDUCATION

NORTHWESTERN UNIVERSITY MCCORMICK SCHOOL OF ENGINEERING Evanston, IL
Master's Degree in Computer Science and Bachelor's Degree in Computer Science Expected Jun 2024
Major in Computer Science; Minor in Data Science & Engineering | Bachelor's GPA: 3.82 | Master's GPA: 4.00
Relevant Coursework: Agile Development, Computer Networking, Data Privacy, Scalable Software Architecture, Deep Learning, Computer Security, Statistical Language Modeling, Operating Systems, Machine Learning, Data Structures & Algorithms

WORK EXPERIENCE

SQUARE (BLOCK, INC.) (Remote) Chicago, IL
Software Engineer Intern - *Developers Experience* Jun 2023 – Sep 2023
- Integrated user testing capabilities into the Web Payments SDK reference. Used Svelte, Optimizely, OneTrust, internal service APIs, Cypress, GitHub. Created and deployed an A/B test for a frontend feature. Authored Design Doc, Experimentation Doc, and Runbook. Led scrum meetings using Jira, Trello. Ran testing party.
- Prototyped an automated phone calling system for Square sellers using ChatGPT API, Square APIs, Twilio, Amazon Lex.

SQUARE (BLOCK, INC.) (Remote) Chicago, IL
Software Engineer Intern - *Developers Experience* May 2022 – Sep 2022
- Developed a new frontend feature for Square's Web Payment SDK website for users to simulate making payments using an in-browser code editor. Used Svelte, Typescript (HTML/CSS/JS), CodeMirror API, Cypress, GitHub.
- Developed a cross-platform discount and marketing promotion sharing tool for Cash App/Square Seller Dashboard. Used Node.js servers and the Square Payment API.

ARGONNE NATIONAL LABORATORY (Remote) Chicago, IL
Software Development Intern - *Energy Systems Division* Jun 2021 – May 2022
- Developed Python scripts and a MySQL database to collect real-time customer outage data from 232 million US residents for power outage forecasting. Designed and implemented geo-mapping functions for comprehensive power outage analysis.

PROJECTS

NATURAL LANGUAGE PROCESSING PAPER - "CRAFT" - x-ry.github.io/CRAFT.pdf Jun 2023
- Created and authored a research paper on a NLP model for cross-domain abstractive text summarization using incremental fine tuning on pre-trained models, demonstrating superior performance over baseline PEGASUS on CNN/DailyMail. Used Python, PyTorch, SBERT, HuggingFace Transformers.

IEEE NORTHWESTERN CHAPTER PROJECT - "REMEDI" Evanston, IL
Project Manager Sep 2022 – Apr 2023
- 2023 Showcase Award Winning Project out of 14 teams. Managed a team of four students, led the development of a health/medicine management app. Utilized an ensemble ML model to scan prescription bottles and built a GPT-powered assistant. Used React, Firebase API, Python, Google Vision API, spaCy, OpenAI ChatGPT API, Tailwind CSS, and Mantine.

NORTHWESTERN HACKATHON - "SWIFTERNSHIPS" - swifternships.tech Apr 2023
- Created a platform connecting college students with micro-internships for professional experience, built with AWS Lambda, Twilio, S3, Firebase Realtime Database, Cloudflare, and Sendinblue. 2nd place out of 250+ participants.

IEEE NORTHWESTERN CHAPTER PROJECT - "SUMMRI" Apr 2022
- Built a program that detects brain tumors in MRI scans using an image segmentation model using Python ML Framework Keras, as part of a team project to create an assistive tool for radiologists. 1st place at the 2022 Showcase.

NORTHWESTERN HACKATHON - "GIFT WHISPERER" Apr 2022
- Created a React site utilizing OpenAI GPT-3 (pre-ChatGPT) for personalized gift recommendations. Used Multithreading and Web Scraping to dynamically update our site with real product info. 1st place out of 100 participants.

ACTIVITIES

GOOGLE COMPUTER SCIENCE SUMMER INSTITUTE Jun 2020 - Sep 2020
- Built web applications using the p5 Library, APIs, Node.js, and ExpressJS.

TECHNICAL SKILLS

Python (Tensorflow, Jupyter Notebook), C, C++, Java, Javascript (React, Node.js, Svelte), Cypress, R, Networking, Fullstack Dev, AWS (S3, Lambda, RDS), Git, GitHub (Code Review, Repos), SQL, Linux, Natural Language Processing, Artificial Intelligence