Alex Manka

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EDUCATION

NORTHWESTERN UNIVERSITY — Evanston, IL
Master of Science — Sept 2020 - June 2022
Bachelor of Science — Sept 2018 - June 2022
Major in Computer Engineering
Cumulative GPA: 3.64/4.0
Relevant Coursework: Microprocessor Systems Project I & II, Embedded Systems, Advanced Computer Architecture, Computer Architecture I & II, Social Media Mining, Graph Theory, CPS (Cyber Physical Systems) Design and Application, Intro to Computational Physics, Internet of Things, Advanced Digital Design, Programming Languages, Intro to AI, Intro to Networking, HCI, Design and Analysis of Algorithms, Intro to Computer Systems, Data Structures and Algorithms

SKILLS

Technical Skills: Advanced in Python, C++, Verilog, Javascript, HTML/CSS/React; Proficient in MATLAB, ASM/C/Unix, Git
Languages: Fluent in English, Conversational Proficiency in Spanish

WORK EXPERIENCE

Y COMBINATOR - TRAINED EYE — San Francisco, CA
Software Engineering Intern — June 2021 – Sep 2021
- 3 employee venture-backed autonomous trainyard systems startup
- Implemented computer vision and object detection utilizing OpenCV, Cuda, YOLO, and multithreading in Python
- Performed in-person prototype testing on a trackmobile with an embedded systems microcontroller setup

UNDERGRADUATE RESEARCH — Evanston, IL
Student Research Assistant
Robotics — June 2019 – Sep 2019
- Contributed to a graduate lab researching Swarm Robotics: Algorithms and Behaviors
- Designed and implemented a scripting GUI in Python for algorithms (coded using numpy, matplotlib, tkinter, and other libraries)
- Streamlined analysis via raw data transformations to increase efficiency

NORTHWESTERN UNIVERSITY INFORMATION TECHNOLOGY — Evanston, IL
Lead IT Consultant — Oct 2018 – Oct 2020
- Supervised and served as a resource to a team of consultants on day to day functionality
- Prepared and executed training modules for a cohort regarding new policy, implementation, and resources
- Upkept NUIT web page database to service Northwestern students, faculty, and staff with technology documentation
- Promoted to Lead consultant January 2020
- Bridged the gap between corporate implementation by acting as a liaison to relegate services to Northwestern associates

UNIVERSITY PROJECTS

POSTURE PAL — Jan 2022 – June 2022
- Designed and implemented a harness device that detected posture in real-time and notified the user of poor posture
- Programmed a micro:bit microcontroller for computing and storage (coded in micropython), IMU with both a magnetometer and accelerometer (connected via I2C), and vibromotors and LEDs to alert the user

WASA (WORD ASSOCIATION SENTIMENT ANALYSIS) — April 2021 - June 2021
- Pulled tweets using the Twitter API and ran it through our own sentiment analysis algorithm (WASA) and compared it to LIWC and other sentiment analysis algorithms; our algorithm treated 3-word groups as sets rather than word adjacency for weights
- Coded in Python and performed within 6% of leading algorithms (preprocessed text with stopwords, stemming, and more)

DESIGN, THINKING, AND COMMUNICATION (DTC) — Jan 2019 - June 2019
- Led a team of engineering students in designing, prototyping, and actualizing a walker attachment for stroke or spinal injury patients at Shirley Ryan AbilityLab
- Programmed an Arduino in C++ to extract data from force sensors in real-time and transfer it to a database via a socket connection to be analyzed
- Conducted background research, user observation, mockup/user/background testing with full documentation of all the processes - Condensed into a thorough 67 page final report