Karan Sodhi

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Education

University of Illinois at Urbana-Champaign *December 2022*
Bachelor of Science in Computer Science Champaign, IL
- **GPA**: 4.00 / 4.00
- **Current Coursework**: Algorithms, Software Engineering, Artificial Intelligence
- **Completed Coursework**: Data Structures, System Programming, Database Systems, Software Design Studio
  Intro to Kotlin, Probability & Statistics, Numerical Methods, Discrete Structures, Linear Algebra, Calculus III

Experience

Verily (Google Life Sciences) *May 2021 – Aug. 2021*
Software Engineering Intern, Devices San Francisco, CA
- Implemented features for an Android app that would allow it to connect to Verily's smartwatch, check for updates, and if applicable download the new firmware image from the cloud, break it up into small chunks, and stream it over to the watch
- Built the app with Kotlin and communicated with the watch over USB using Protocol Buffers
- Developed embedded firmware for the STM32L5 microcontroller in C/C++ to demonstrate how TrustZone, a security feature for Arm Cortex processors, could be used to securely read, write, and store cryptographic keys on the watch

NetJets *June 2020 – Aug. 2020*
Software Engineering Intern, Crew Innovation Lab Columbus, OH
- Automated identifying and updating discrepancies between passport data scanned from the crew's mobile app during flight boarding and what was stored in the database, resulting in hours of saved labor and improved data accuracy by up to 25%
- Enhanced the app's back-end architecture using Grails, Groovy, and Java to accept, parse, and model scanned passport data sent by the client. Wrote robust unit tests for all of the new features implemented
- Practiced Agile and Scrum in 2 week sprints and contributed in daily stand-ups, code reviews, and design workshops

Projects

OCR++ *Apr. 2020 – May 2020*
Desktop App
- Utilized C++ and Cinder to build an app that transcribes handwritten text live from a webcam or from an image file
- Developed a k-nearest neighbors algorithm using over 10,000 training images to classify text with an accuracy of 89%
- Processed images and extracted individual letters and numbers from pieces of text using OpenCV
- Designed a simple to use UI using ImGui to overlay the predicted text on top of the original image

Gen Ed Finder *Nov. 2019 – Dec. 2019*
Android App
- Built an app in Java that helps students find classes they need to graduate or classes similar to ones that they have enjoyed
- Discovered similarities between classes using the Python machine learning library scikit-learn
- Created a REST API using Python and Flask to return the results of the similarity model to the app and deployed it on AWS

Secure and Sure *Aug. 2019 – Dec. 2019*
Web App
- Collaborated with a team of 6 to design a web app that securely stores ID documents for retrieval online
- Parsed IDs using Azure computer vision so users could easily enter their information on government assistance forms
- Secured data by using a combination of RSA and XOR encryption to encrypt the image file and parsed contents
- Created the UI with React, stored user info in Firebase, and deployed with Netlify

Skills

Programming	C/C++, Python, Java, Kotlin, SQL, Android Development, STM32 / Cortex-M MCU Development
Tools & Technologies	Git, Flask, OpenCV, Scikit-learn, Docker, AWS, GCP, MongoDB, Neo4j, Arm TrustZone, J-Link