CHARLTON SMITH

BACKEND & MOBILE ENGINEER (ML Eng.📚) - BRONX, NY 10467

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WORK EXPERIENCE

AMERICAN FAMILY INSURANCE – ANDROID ENGINEER (JAN. '22 – CURRENT)

AMERICAN FAMILY INSURANCE – ANDROID INTERN (JAN. '21 – DEC 21)
- Utilize android development training resources such as secure code warrior to write secure code
- Fixed bugs and deployed testable code
- Presented a Machine Learning Project: built a CNN to detect whether a car is damaged or not using a simple binary classifier. Exported into tensorflow lite models for integration.
- For my intern project I utilized MLKit for vin scanning capabilities and plate detection. While trying to create my own solution, I lacked the necessary resources to build my own model but I did learn more about preprocessing and post processing layer of what I needed to build. OpenCV removing glare from the screen. Exploring regex, doing research on vins. Relearning cameraX library.
- Using opportunity to document and create test cases for pre and post processing

SWEET.IO – LEAD API ENGINEER (Apr. '19 – Apr. '20)
- Migrated & fragmented legacy code built on Laravel 4.2 over to multiple microservices w/ Lumen 7.x
- Rebuilt OAuth Token Authorization and moved it over to AWS Serverless Lambda to improve requests speed and add authentication to the microservices.

RENTAH - MOBILE/BACKEND DEV (May '16 – Present)
- Intern (May' 16 – Sept '16) – Started out building their first android app.
- Improved team work performance by rebuilding the Rentah web, backend application, migrating & restructuring the codebase to Laravel.
- Built Restful API's for the frontend and mobile applications to consume.
- Handled deployment (Low Dev-Ops Experience)

TECHNICAL EXPERIENCE

LANGUAGES: Kotlin, Swift, PHP, Python, Java, C#, C/C++, Javascript

DATABASES: MySQL, SQLite, Postgres, MariaDB

FRAMEWORKS: Laravel/Lumen, Node.js, Vue.js, React.js, Google Colab, Jupyter

NETWORKING: Socket Programming (TCP, UDP), Restful API Design/Services

UNIT/UI TESTING: JUnit, PHPUnit, Expresso.

ANDROID DEVELOPMENT EXPERIENCE

Retrofit, Coroutines, Dagger2 (+ Hilt), Databinding, Room. MLKit, Koin, Crashlytics, Analytics, Adobe Analytics, Optimizely, MVVM, MVP, MVC, Repository, Observer, Builder, Dependency Injection, Singleton, Command. Property files. On the surface level: Vulkan, armeabi-v8a/arm64-v8a, x86_64, x86 & ABI Splits, App Bundle, Play Feature Delivery.

iOS DEVELOPMENT EXPERIENCE (1 Year)

SwiftUI, VIPER, MVC, MVP, Alamofire, KMM (Kotlin Mobile Multiplatform)

EDUCATION EXPERIENCE

CITY COLLEGE / COMPUTER SCIENCE (M.S) (Jan '23 – 'Present)

- Theoretical Computer Science, Software Engineering, Programming Language Paradigms, Graph Theory, Parallel Algorithm, Operating Systems, Compiler Construction, Artificial Intelligence, Natural Language Processing, Pattern Recognition and Machine Learning, Topics in Artificial Intelligence, Computer Graphics

LEHMAN COLLEGE / COMPUTER SCIENCE (B.S) (Aug '20 – '22)

- Video Game Dev, iOS Dev, Database Sys., AI/Machine Learning, Linear Algebra

BRONX COMMUNITY COLLEGE / COMPUTER SCIENCE (A.S) (Jan '14 – '19)

- Data Structures & Algorithms, Calculus I, II, III, Object oriented programming

PORTFOLIO EXPERIENCE

MI (ANDROID & iOS CLIENT) – PS4 + PS3 TOOL MANAGER (JAILBROKEN DEVICES)

I recently had learned about the capabilities for Jailbreaking the PS4 so as an introductory [Project (repo)](), I've developed a PS3 + PS4 Tool Manager that gives you the options to send custom homebrew packages. I've put my time into exploring dependency injection w/ hilt, viewmodels and learning about design patterns in Android as-well as iOS.

VIN SCANNING FEATURE – AMERICAN FAMILY INSURANCE (FORTUNE 500)

VIN Scanning was something that I dedicated my time to understanding. I have explored multiple solutions but wanted to understand how OCR works. I took Linear Algebra and Advance Linear Algebra to understand matrices and took a AI/ML Course during my intern year learning about it. Sadly I didn't get to create a model but was still able to utilize my pre and postprocessing techniques to finish this feature using MLKit as an OCR Scanner. Because of this intern project, I developed it into maturity and took it to production. I appreciate all the engineering that goes into research and development and hope to join a R&D research team in AI/ML Engineering. Technologies I used were Tensorflow but bailed for MLKit, Regex, Boundary Detection, Coroutines (Android) and Research on decoding and verifying VINs.

DETECTING A DAMAGED CAR – PRESENTATION

Using a Binary Classifier, I was able to build a way to detect whether a car is damaged or not. I utilized convolution neural networks and Max pooling to extract as many patterns/features from the data to be able to give it a decent accuracy score

RENTAH.COM – [Website] [Android App] [LinkedIn]

A Brooklyn-based tech startup that provides a peer-to-peer platform on which anyone is able to rent out their goods, services, or spaces at a price of their choosing.

SUPREME1 (DISCONTINUED) – ANDROID, NODEJS, LARAVEL [Website]

Android client that allows you to communicate with Yoworld (A Popular Facebook Game). FFDec for decompiling and writing assembly to modify the swf game, NodeJs server to handle authentication w/ Laravel Backend as well as sending TCP packets to Android App <-> NJS SocketServer <-> SWF

YOPRICE - PERSONAL PROJECT (DISCONTINUED)

Using YoWorld 's (A Facebook Game) JSON files for their items I was able to create an automated job to grab the latest released items on the game and create a community and a price guide using that information.

MONOPOSE - HACKATHON 3RD [HACKNY] [Dev Post Article] [Source Code]

Monopose was developed in a 17-hour hackathon held by HackNY (April 2017). The goal of the application was to improve a self-training techniques by checking the users postures in hopes to avoid injuries w/ equipments. This was made possible using the **Clarifai** API to create training models and using **ZXing** for Image recognition and scanning capabilities; An idea we hope that the user would be able to see how this particular gym equipment should be used. It came with an instructional video that would show how their posture should be.

WHATSIN - HACKATHON 1st -[Article (Page 8)] [Demo Landing Page] [Source Code]

WhatsIn was an application I also developed that allowed you to scan the UPC Barcode using **ZXIng** and read the ingredients. It would then be used to fetch the definition for the chemicals and give you a brief description.

JAILBROKEN ANDROID/PS3/PS4 PROJECTS:

MI (ANDROID & IOS CLIENT) – PS4 + PS3 TOOL MANAGER – [WEBPAGE] [Thread]

WEBAND (ANDROID CLIENT - WEBMAN MOD) - [WEBPAGE] [Thread]

Allows you to modify and read memory from the PS3 including attached game processes. Able to launched games, upload & download files via FTP.

JMAPI (LIB & ANDROID CLIENT - PS3MAPI) - [WEBPAGE] [Source]

Allows you to modify and receive memory from the ps3 as-well as alter internal ps3 settings.

CCDROID (LIB & ANDROID CLIENT - CCAPI) - [WEBPAGE] [Thread]

Android client that allows you to communicate with CCAPI protocols

REFERENCES:

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