Avery B. Dews

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Education

University of Michigan – May 2016
College of Literature, Science, and the Arts
BS, Computer Science & Global Media Studies

Skills

Programming Languages: C++, Python, iOS (Swift), JavaScript, MATLAB
Markup Languages: HTML/CSS, TeX
Computer Skills: MS Office, Photoshop

Experience

Rocket Fiber, Detroit, MI — October 2016 — Present
Video Systems Engineer Intern

- Designed, developed, tested, and deployed iOS application to streamline equipment installation process at a rapidly growing fiber-optic internet service provider
- Utilized existing iOS AVFoundation framework to implement a barcode scanning interface with automatic image capture and compression scheme for quick HTTP transfer
- Developed REST manager and JSON parsing classes while employing reusable, object-oriented design principles to facilitate data transfer and updates between users, company web services, and databases to increase accuracy of client and equipment information
- Designed and implemented user interface while testing and resolving all layout issues around device screen resolution and orientation across all iOS devices
- Collaborated with product managers and company leadership in code reviews and provided technical insights on optimization and REST API endpoints
- Developed application to generate unique identification numbers for client circuits in Python, including designing and implementing user interface with Tkinter
- Developed SWQL queries to capture network usage information for daily, weekly, and monthly reports within SolarWinds infrastructure environment for M-1 Rail System
- Contributed design ideas and implementations in weekly team meetings

Course Projects

- **Assisted Video Editing:** (iOS - Swift) Developed video capture & editing app for a motor-impaired user in an Agile group development style from January to April 2016. Led initiative to design, develop and test user interfaces (approximately 35% of code), iOS AV framework, and conversion to HTTP network protocols.
- **Elliptic Curve Cryptosystem:** (C++) Implemented variant of Menezies-Vanstone Elliptic Curve Cryptosystem based on custom integer class in pair programming environment. Designed, coded, and integrated encryption/decryption algorithms, including updating and administering unit tests (approximately 60% of code).
- **Traffic Sign Recognition:** (Python/MATLAB) Researched, formulated, and implemented machine learning algorithms for traffic sign recognition, including training a neural network using PyBrain machine learning library on real-world data sets with 90% accuracy.

Individual Projects

Record Scanner

- Designed and developed iOS (Swift) app using Discogs API for simple management of physical music collections through barcode scanning