David Duplantier

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EXPERIENCE

Web Developer   *Present*
The Foreign Observer Online Magazine
- Co-founder of The Foreign Observer's XPlore website, run by graduate journalism students at Northeastern University
- Design data visualization projects, implement simple frameworks for interactive pages and handling data input
- Develop open source libraries for data visualizations (e.g. for Leaflet) used by The Foreign Observer and the broader journalism community

Lead Developer   La Jolla, CA
UCSD CSE Department | Computing Paths   *July 2017 – September 2017*
- Led team of 5 developers to build computingpaths.ucsd.edu – an official UCSD site for new CS students– from scratch, gathered and refined requirements from client, and delivered on schedule under strict 8 week deadline
- Created development environment for team by:
  - Writing Node.js scripts to watch for updated files and recompile, so changes are integrated in one command
  - Using Express server so each team member can experiment with website locally
- Used Pug HTML template engine to design webpages loosely coupled to data so the website can be updated frequently without breaking
- Designed simple JSON database to store content separate from HTML and JavaScript

Software Engineer Intern   Ho Chi Minh City, Vietnam
Global Cybersoft   *July 2016 – November 2016*
- Runner-up winner of prize from Student Exchange Vietnam in partnership with the U.S. Embassy in Vietnam for internship in Ho Chi Minh City
- Worked on train system management web app in software engineer as well as business analysis roles over the course of 5 months:
  - Learned the Spring Framework, RESTful APIs, Inversion of Control, and Dependency Injection principles to write Java classes to contain data for the train system, as well as Hibernate and Cassandra
  - Learned AngularJS and MVC pattern with JavaScript to update pages in real-time, and learned HTML and CSS to implement page designs
- Learned how to use Apache as a local development server, and gulp for automating frontend tasks

PROJECTS

Digitize App   *Present*
- Current iteration of app is intended to allow users to scan handwritten work using Google MLKit, which is uploaded to Google Drive as a .txt file
- Building off my experience from *DejaPhoto*, this project is intended to learn how to implement clean architecture, to explore more technically challenging issues and additionally learn iOS development with Swift and Kotlin for Android development

Operating Systems Development   *January 2018 – March 2018*
- Implementation of four pieces of the kernel for a UNIX-based, learning operating system written in C:
- Context switch to support multitasking by learning to use assembly routines for saving a process's context
- CPU scheduling policies, and learned how to use shared variables in the kernel to coordinate between processes
- Semaphores, for the kernel to support synchronization
- Thread package – how to use dummy variables, the Yield/Fork system calls, and manipulate stack pointer over function calls to create kernel level threads

SD HACKS 2017   La Jolla, CA
NutriLink Web App   *October 20-22, 2017*
- Built a nutrition web app in 36 hour period, learning the Genome Link API and jQuery in order to complete the project
- Used Node.js for the backend and the Express Framework, as both are amply documented and allow for quick learning

DejaPhoto Android App   *April 2017 – June 2017*
- Built Android app to update user's wallpaper in real-time according to time and location, using photos from user's gallery and friends' galleries
- Learned Google Firebase to store/send friends' photos, for authentication, and designed a flattened JSON data structure for efficient retrieval
- Simulated two iterations of agile software development, with focus on design patterns: during the 1st iteration the class to access photos was built using the Adaptor pattern, as it was not yet known what database would be chosen to store friend's photos

SKILLS

Languages: C, C++, Java, JavaScript, Python, SQL, Swift   **Technologies:** AngularJS, Bootstrap, D3.js, Hibernate, Node.js, Pug, Sass, Spring

EDUCATION

University of California, San Diego   La Jolla, CA
Bachelor of Science in Mathematics & Computer Science   *September 2013 – March 2018*