

# Michael T. Davis

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## Summary

Over ten years of experience as a software developer.

A dependable and detail-oriented fast learner who is always looking for new challenges.

Able to successfully allocate time and effort among multiple projects.

Notable skills include programming in JavaScript (particularly React) and Python.

## Professional Experience

### Senior Software Engineer: February 2018 – September 2018

*Level 12, Louisville, KY (80% Remote)*

Worked on various projects using React on the frontend and Python (Flask and SQLAlchemy) on the backend.

### Software Engineer: March 2015 – February 2018

*Prometheus Research, New Haven, CT (100% Remote)*

As a software developer on the Professional Services Team, my primary focus was on developing web applications for scientific research groups. These applications were built on top of RexDB, our open-source platform for medical research data management, using React on the frontend and Python on the backend.

#### *Accomplishments:*

Served as technical lead for several client projects. Clients included the Children's Hospital Association, Autism Biomarkers Consortium for Clinical Trials, Marcus Autism Center, and the Women's Health Research Institute.

Developed extensively customized features for specific clients, including:

- A workflow for importing CSV or Excel files containing research data about episodes of sepsis in infants and children. Parsing, validation, and storage of this data took place asynchronously since each file could contain many thousands of rows.
- Various calculations and Plotly charts to aid analysis of trends in this data, and a workflow for generating PDF reports containing these charts.
- A workflow for uploading large (GB+) recordings of experiments.

- A Python script for securely synchronizing various subsets of those recordings on authorized research team members' computers.
- A dashboard for tracking comments regarding the quality of those recordings.

Contributed workflows and data model updates to the open-source platform itself, for non-client-specific features such as tracking biospecimen sample usage, recording familial relationships, and generating appointments.

## Software Developer: June 2008 – March 2015

### *Compunetix, Monroeville, PA*

As a software developer in the Video Systems Division, I primarily worked on the UI components of our videoconferencing system, such as operator consoles, and several directly-related server-side components.

### *Accomplishments:*

Designed and implemented several key components of our videoconferencing system:

- A suite of single-page web applications for controlling and configuring the system. The web applications share a common MVC architecture built on jQuery.
- The JSON API that those web applications use to communicate with the server.
- The Java server component for those web applications, running in Apache Tomcat.
- A replacement for our Java server component, written in Python, using Twisted.
- A library for Java-based clients of the JSON API, using Jackson.
- A tool that embeds Jython to run automated testing scripts against our system.
- The build scripts for the entire project, which automate and coordinate various tools including Rational ClearCase, GNU Make, and Apache Ant.

Conceived the architecture of a rapid prototype for integrating WebRTC into our videoconferencing system, implemented the frontend, and supervised two other developers in implementation of the backend. We completed the project well ahead of the deadline, and the prototype was demonstrated at an important trade show.

Contributed significantly to other components inherited from other developers, including a Java application which serves as the hub for communication between clients, a MySQL database, and several embedded applications.

Introduced the Code Collaborator tool into the team's workflow, which has streamlined our code review process and improved the quality of our products.

Wrote customer documentation, including release notes, installation procedures, and upgrade procedures.

## Education

### University of Pittsburgh

Bachelor of Science in Computer Engineering, with a Minor in Computer Science, April 2008.

Graduated Summa Cum Laude with a GPA of 3.939.

## Skills

Languages: JavaScript, Python, Java, HTML, CSS, SQL.

Libraries and Frameworks: React, Node.js, mobx, Bootstrap, Material-UI, jQuery, jQuery UI, SQLAlchemy, Alembic, AngularJS 1.x, Twisted, Jackson, Jython, web.py.

Other Technologies: JSON, XML-RPC, RMI, WebRTC, WebSockets, XSD Schemas, XPath, HTSQL.

Tools: Mercurial, Git, Gulp, Grunt, Babel, Browserify, Webpack, npm, Bower, Karma, Jasmine, Jest, TypeScript, Sublime Text, NetBeans, Code Collaborator, Microsoft Office.

## Additional Information

Volunteer for Big Brothers Big Sisters.

European Management Seminar Certificate – University of Rouen, France, May 2005.

Tau Beta Pi (Engineering Honor Society).

Designed, implemented, and administered the website for the University of Pittsburgh's inaugural games of Humans vs. Zombies.