

Skills and Technologies

Languages and Frameworks: JavaScript, PHP, Bash, SQL, C, Python, HTML, CSS, MATLAB, Java, PowerShell, jQuery

Systems and Servers: Linux, Windows, macOS, MySQL, Node.js, Apache, NGINX, Synology NAS, AWS Services (RDS, S3, EC2, ELB, VPC, ECS)

Tools and Practices: Git, SVN, Jenkins, Docker, Vim, VS Code, Jira, Confluence REST API, DevOps, CI/CD, R&D, Agile Methodology

Experience

Lead Project Engineer

PHY Wireless | May 2016 - Present | San Diego, CA

Core member of a telecommunications startup creating a novel cellular positioning technology for LTE and 5G modems. The product, hellaphy, achieves high precision (50m) with minimal battery consumption (10+ years) and a compact footprint by leveraging existing network signals.

- Lead full stack engineer on the development and maintenance of hellaphy.cloud, a cloud-based service for monitoring, managing, and configuring IoT devices through a REST API. Utilized a LAMP stack + Docker and implemented a comprehensive DevOps pipeline, ensuring seamless transitions across development, staging, and production environments within Amazon's AWS infrastructure.
- Contributed significantly to the design and execution of R&D activities using a MATLAB model for the hellaphy cellular positioning product. This involved extensive work on location algorithm research, digital signal processing, data processing, filtering and analysis, and regression testing within a streamlined CI/CD workflow.
- Designed an LTE reference signal simulator in MATLAB built around 3GPP specifications to help train and study our model.
- Developed a scalable job dispatching solution in a Linux environment with Bash that improved the time efficiency of our model.
- Designed and maintained an internal LAMP stack for a web tool aiding in analysis and visualization of research. Features include dynamic graph generation, data visualization overlaid on maps, and conducting statistical analysis over datasets.
- Led nationwide field testing using advanced RF equipment and proof of concept designs. Conducted performance evaluations, data collection, and iteratively improved design for successful customer trials.
- Developed a web app using Python, JavaScript, and PHP on a Raspberry Pi host system to monitor and automate field testing operations. Controlled entirely from a mobile phone user interface, substantially increasing field testing throughput.
- Created physical prototype designs and software systems used in live customer-facing trials to assess the product.

Game Developer

Sole Proprietor | San Diego, CA

Sole programmer for a commercial game designed and sold for multiple platforms (iPhone, Android, Windows, macOS). Drove all aspects of development from inception to completion, including marketing, PR, and business management.

- Designed and optimized in-game systems to meet memory and performance goals across target platforms.
 - Published and maintained multi-release software versions for target platforms.
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Achievements and Community Activity

Patents

- **Patent #US-11733342-B2:** The patent is for data fundamentals that allow for on device locationing.
- **Patent #US-20220334215-A1:** The patent is for hybrid positioning algorithms utilizing power and timing LTE signal measurements.

Commercial Games

- **Sandy's Great Escape:** Solely programmed puzzle game launched on multiple platforms. Sold 800+ units across all stores.

Personal

- Long-standing admin for the MATLAB community Discord - largest online community space for MATLAB help and discussion.
 - Participated and won first place in both the 2020 and 2021 48-hour game jams hosted by San Diego IGDA.
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Education

Bachelor's Degree in Electrical Engineering

UC San Diego | Grad. June 2017