RAY **MALLICK**

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EDUCATION

Master of Science, Mechanical Engineering   **May 2015**
University of Houston, Houston, TX

Bachelor of Science, Mechanical Engineering   **Dec. 2011**
University of Texas at Austin, Austin, TX

RELEVANT SKILLS & STUDIES

- ✓ Front-end development: JavaScript (ES6), React, Angular, HTML5, CSS3, SASS/LESS, JSON, MVC, Git, Webpack, ThreeJS, Code Patterns
- ✓ Software Engineering: Data Structures and Algorithms, Data Optimization. Other Languages: Python, Matlab, Java, Clojure.
- ✓ Extra: Mechanical Engineering, Adobe Suite, Statistical Analysis, Communication and Organizational Skills, Technical Writing

RECENT AWARDS

- **2nd in Mechanical Engineer Graduate Research Award**   **February 2014**
- **1st Place in Voltron Hackathon**   **July 2017**
- **2nd in CodeRed National Hackathon (Coding Competition)**   **April 2015**

RECENT CODING PROJECTS

Procedural Solar System Generator + VR Explorer
- A 3D solar system generator and game engine built on top of Three.JS + ReactJS + Deepstream + WebVR and actual Keplerian physics that procedurally generates a solar system of a random age with completely unique properties for planets, moons, planet count, rings, and star. A geometry and vector calculus lib was built to handle 3D absolute and relative positioning + topology.
- Ability to customize a home planet with the addition of unique 3D models chosen by the user. The solar system is JSON-ified by the engine, and saved to a database with real-time updates with Deepstream, where it can be loaded again.

AWS Service Diagram Builder
Voltron Hackathon – 1st Place Winners
- An AWS diagram builder built on top of Electron + React JS + Redux + AWS SDK that automatically generates the AWS services diagram. An intelligent tagging algorithm generates the diagram and a UI tools were built to add in external services and provision any extra AWS services which are add to the diagram.

AirDrum
CodeRed National Hackathon – 2nd Place Winners
- A virtual air drum web application using the Myo Armands and Leap Motion sensors to fully create a realistic air drumming experience. Built with JavaScript, HTML5, CSS, web sockets, Bootstrap.

Smart Drone Brain
- Using existing drone API, the team built a simple drone control software to initiate, navigate to a set GPS location, and land. Built with Python, Arduino, and Pixhawk

Oculus Rift VR Flight Game
HackTX – Fan Favorite
- A virtual reality flight game created using the Unity SDK and an Oculus Rift. Built using Java, and Unity SDK.

RECENT RELEVENT EXPERIENCE

Senior Software Engineer   **Dec. 2019 to Current**
Ellation (Time Warner), San Francisco, CA
- Developing the next generation of living room, mobile and web applications for Crunchyroll and Time Warner's video streaming service (CrunchyRoll, VRV, HBO Now) using React Native, Typescript, Youi integrations.
- Deploying and integrating a CICD pipelines that has end-to-end, integration and unit testing for all supported devices from iOS to Android TV.
- Mentoring team in React and Javascript (ESNext) fundamentals and coordinating with engineering manager to set proper agile procedures and practices.

Senior Software Associate - Full Stack Developer   **Nov 2016 to Dec. 2019**
Capital One, San Francisco, CA
- Lead the primary development of multiple fully React-based experiences for the interactive digital touch screens and tablets in the Capital One Cafes & Retail spaces (National Expansion) from courses, games, educational content to digital ads.
- Architected the React Web Applications all the way from Webpack build processes to Redux state management implementation, to React Components. Created custom middle ware layers to interact with for interfacing with hardware, and implemented custom collision-based physics engines within PixiJS.
- Coordinated with external (Stratacache) and internal groups (designers, distributers, legal, D&P) and shipped production code t Capital One retails spaces that has been rigorously tested and engineered for consumers.
- Mentored new developers in work with React, ES6/7, & more advanced topics; helped grow them at an accelerated pace.

- Helped speed up development time by utilizing a CMS and a custom middleware layer to power the live text and data in retail spaces.
- Developed and upgraded the platform that powers CapitalOne.com; lead the feature development of upgrades across LOBs in the platform architecture resulting in lower page bundle sizes (by 35%), improves pages speed, & increases developer productivity.

Software Engineer I   **Aug. 2015 to Nov. 2016**

Triad Interactive, Washington, D.C.

- Developed from scratch, with a 5-person team, a pixel perfect and functional Ed-tech version of Microsoft Office Suite 2016 (Word, PowerPoint, Excel, Access) in browser under 10 months with React, Flux, Immutable, ES6, Webpack, Node.
- Lead the primary development of multiple React module buildouts such as Shell and Backstage for MS Office 2016 and pro-actively created internal tools in order to speed up development of JSON-based content writing.
- Became proficient at React + Flux, Git and ES6 development through numerous component and high level functionality build outs.
- Collaborated with other engineers on team and content writers to rapidly progress content development schedules and testing cycles, using JIRA.
- Mentored other junior level developers in basic JavaScript and React, leading to quicker growth in junior developers' core responsibilities.
- Received awards such as Best Product/Software Development teams Codie 2016.

Graduate Research Assistant   **Jan. 2013 to June 2015**

Texas Center for Superconductivity, University of Houston, Houston, TX

- Researched synthesis of nanowires for next generation superconductors & semiconductors in wind-turbine and power system applications for an NSF and DOE funded program including designing custom industrial process systems such as a metal-organic deposition system (MOD) & all additional electrical components
- Created novel heat treatment and fluid dispersion techniques to reduced nanomaterial array growth defects by 85%
- Managed multiple projects and tasks such as maintenance and improvement while coordinating with engineers and technical personnel in industrial research materials processing center

Mechanical Engineer   **Jan. 2013 to May 2014**

H&P Product Design, Austin, TX

- Effectively led the product design, finance management, manufacturing, and web development for commercial products such as the laser-etched cards featured in Entrepreneur Magazine, & Strikingly.com
- Coordinated the makerspace area within the studio including building and furnishing the space that resulted in multiple hands-on collaborative projects such as the modular acoustic booth and laser-cut metal products.

PUBLICATIONS

Development of an Analytical Design Tool for Monolithic Emission Control Catalysts and Application to Nano-Textured Substrate Systems

*C. A. Baker, A. Emiroglu, **R. Mallick**, O. Ezekoye, Li Shi and M. Hall*

Journal of Thermal Science and Engineering Application, April 2014

Improved flux pinning by prefabricated SnO_2 nanowires embedded in epitaxial $YBa_2Cu_3O_x$ superconducting thin film tapes

*V. Selvamanickam, **R. Mallick**, Xin Tao, Y. Yao, M. Gharahcheshmeh, A. Xu, Y. Zhang, E. Galstyan, and G. Majkic*

ASC Nano, March 2015, Submitted

Synthesis and Testing of Tin-Oxide Nanowires for Flux Pinning in 2nd Generation Superconductors – Master's Thesis

University of Houston, Spring 2015