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Denzal Martin

Full-Stack Software Developer

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Full-stack software developer with a recently obtained certificate in full-stack web development through the University of California, Berkeley and a Master of Science in Physics from Stanford University. Eager to apply problem-solving techniques learned while doing Physics research to creating exceptional web applications. Practiced teamwork and project planning on three projects consisting of at least two other peers working towards the certificate. Testing assumptions and making sure conceptual ideas are clear is my approach to solving challenging problems.

EDUCATION

University of California, Berkeley, Full-stack development certificate — June 2021 — Sept 2021
Stanford University, Master of Science, Physics GPA: 3.2 — Aug. 2018 — June 2021
*Performed more than 2.5 years of studies in Stanford Ph.D program before withdrawing

University of California, Merced, Bachelor of Science, Physics GPA: 3.6 — Aug. 2014 — May 2018

TECHNICAL SKILLS

Languages	JavaScript, HTML, CSS, PHP, Python, Java (University of California, Merced CSE 21), C++ (Stanford CS106B)
Tools	React.js, Vue.js, Handlebars.js, Node.js, Express.js, Sequelize, MongoDB, IndexedDB, Service Worker API
Lab Skills	LabVIEW, Direct-digital synthesis, soldering
Soft Skills	Teaching, Teamwork, Communication, Problem-Solving, Project Management

PROJECTS

Space Escape — **Sept. 2021**
GitHub repo: https://github.com/pbyakod/space-escape|**Deployed link**: https://space-escape.herokuapp.com/

- Collaborated with 4 other students to create a story based, space themed game
- Developed back end API routes for retrieving a user's previous games from a SQL-based database and responding JSON formatted data
- Created client-side helper functions for fetching database information and sending authorization headers to authenticate users with JSON Web Tokens (JWT)
- Setup server-side utility function for extracting and validating JWTs sent from the client to protect our API routes
- Clearly communicated to teammates how to integrate their React.js components into the existing structure.
- Documented game loop and associated code snippets in Github README to provide context to how the app works
  Technologies used: Sequelize, Express.js, React.js, and Node.js

Event Architect — **Aug. 2021**
GitHub repo: https://github.com/dmartin4820/event-architect|**Deployed link** https://stark-crag-36907.herokuapp.com/

- Worked with 2 other students to create an app that allows a user to view public/private events that other members created.
- Designed and implemented member, event, event-member, and detail models for database in Sequelize
- Implemented API routes using for getting member data from SQL-based database and rendering JSON formatted data on a page
- Led 2 other students in creating API routes and testing and diagnosing undesired behavior using Insomnia **Technologies used**: Handlebars, Node.js, JavaScript, Express.js, Heroku, Git, MySQL, Sequelize, Fetch API

Jam Map — **July 2021**
GitHub repo: https://github.com/PDPco/jam-map| **Deployed link**: https://pdpco.github.io/jam-map/

- Worked with 2 other peers to generate a list of music that meets user selected criteria so they can find similar music
- Used JSONP technique to retrieve data from iTunes' API to resolve CORS related error as recommended in iTunes' documentation
- Created functions for displaying fetched data to template cards so the user can see song results
  Technologies used: JavaScript, HTML, CSS, Fetch API

EXPERIENCE

Stanford University, Prof. Giorgio Gratta Research Group — **Mar. 2019 — June 2021**
Research Assistant — Stanford, CA

- Analyzed rotational and librational motion of optically levitated microsphere using Fourier and Hilbert transforms with SciPy
- Decreased data processing time by sacrificing space in memory and using Joblib to run functions on multiple similar datasets in Python

- Designed Python helper functions to process raw signals from photodetector using the **opt_lev_analysis library** to extract the most pertinent information about the physical behavior of the levitated microsphere
- Worked independently on adapting previous feedback control scheme to dampen a degree of freedom of an optically levitated microsphere while also incorporating suggestions and ideas from 3 post-docs, 2 graduate students, and advisor
- Reported results in weekly meetings by presenting experiment hypotheses, methods, data, and conclusions to gain context on how to proceed with the project

University of California, Merced, Prof. Sayantani Ghosh Research Group **Oct. 2015 — May 2018**
Research Student Merced, CA

- Used LabView to perform 2-D spectroscopy scan of Mn doped ZnSe quantum dots for research into magnetic sensing applications
- Created LabView program to control magnet and read data for Hanle effect measurement to determine spin lifetimes of perovskite quantum dots
- Performed fits to Hanle effect curves and found spin lifetimes on the order of 10 picoseconds
- Presented to groups of 10 or more peers and professors in MACES fellowship meetings.

University of Colorado, Boulder, Prof. Charles Rogers Research Group **Jun. 2017 — Aug. 2017**
Summer Research Student Colorado, CO

- Derived impedance expression of piezo actuator using Butterworth-Van Dyke model for verifying manufacturer specifications
- Used SEM to study GaN nanowire mechanical response driven by a piezo actuator to quantify nanowires' ability to serve as a mass sensor
- Fit amplitude response curves of GaN nanowires obtained from SEM measurements to determine Q-factor of nanowires

NASA Langley Research Center **Jun. 2016 — Aug. 2016**
Summer Research Student Hampton, VA

- Developed a thermal purification apparatus for removing boron oxide impurities in boron nitride nanotubes (BNNT)
- Performed tests of BNNT and characterized the thermally treated samples with raman spectroscopy, FTIR, AFM, and SEM
- Prepared AFM samples using a nebulizer to deposit BNNTs on mica sheets

Teaching

Teaching Assistant, PHYSICS 24: Electricity, Magnetism, and Optics Lab **Winter 2021**
Stanford University Stanford, CA

Teaching assistant, PHYSICS 21: Mechanics, Fluids Heat **Fall 2020**
Stanford University Stanford, CA

Teaching assistant, PHYSICS 24: Electricity Magnetism Lab **Spring 2020**
Stanford University Stanford, CA

Teaching assistant, PHYSICS 46: Light Heat Lab **Fall 2019**
Stanford University Stanford, CA

Teaching assistant, PHYSICS 26: Modern Physics Lab **Spring 2019**
Stanford University Stanford, CA

- Led lab sections of undergraduate students in groups of around 15 students per class
- Introduced students to weekly lab assignments and relevant class concepts to help students solidfy their understanding of Physics
- Mentored and helped students with how to troubleshoot by testing assumptions and ideas to prepare them for future experiences in lab environments