Mitchell Duncan

Web Developer

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Portfolio: https://mdu830.github.io/react-portfolio/ | **Github:** https://github.com/mdu830

SUMMARY

Full stack web developer, proficient in front-end and back-end web development who provides an improved end-user experience with web-application and other software platforms. Graduated With Honors from University of North Carolina, Chapel Hill intensive Programming Bootcamp as a full-stack web designer. Innovative problem-solver who is passionate about developing apps focused on quality end-user experience and with efficient application delivery.

Programming languages: HTML, CSS, Javascript, jQuery , node-js, Express, MySQL, React.
Applications: Github, Heroku, mySQL Workbench, Atlas: mongoDB, Github Pages.
Tools: Bootstrap, GoogleFonts, Material-UI, React Router, Reactstrap, Sequelize, MongoDB, Mongoose.

PROJECTS

Travel Buddy | https://github.com/kmh8827/project1-team2
- **Summary:** a web application designed to help customers efficiently find the best prices on flights and hotels
- **Role:** Front-end and Back-end Developer
- **Tools:** HTML, CSS, JavaScript, jQuery, Bootstrap, Google Fonts
- **Deployed Application:** https://kmh8827.github.io/Travel-Buddy/

Note Taker | https://github.com/mdu830/note-taker
- **Summary:** This application uses node js and express to organize, store and retrieve notes from a heroku server
- **Role:** Sole author
- **Tools:** HTML, Javascript, CSS, Node Js, Express
- **Deployed Application:** https://stark-sierra-82180.herokuapp.com/

Workout Tracker | https://github.com/mdu830/workout-tracker
- **Summary:** This application helps individuals keep track of all his/her exercises with a comprehensive graph that summarizes the person's weekly workouts.
- **Role:** Sole author
- **Tools:** HTML, Javascript, CSS, Node Js, mongoDB, Mongoose
- **Deployed Application:** https://afternoon-cove-01786.herokuapp.com/

EDUCATION

University of North Carolina Chapel Hill, NC – Full Stack Web Development certificate. Graduated with honors (4.0) in May, 2021. This 24 week program provided intensive training in HTML5, CSS3, JavaScript, JQuery, Bootstrap, Node Js, MySQL, MongoDB, Express, Handlebars.js, React Framework

EXPERIENCE

Carolina Deck Stain Inc
- **Position:** Owner/operator
- **Job Description:** Payroll, sales and marketing, project manager for high quality pressure washing and deck staining company
- **Location:** Morehead City, NC 28557
- **Date of Employment:** February 2016 - Closed because of Covid-19 and to enter University of North Carolina, Chapel Hill.

PRIOR TECHNOLOGY EXPERIENCE

1. **Hashcat Supercomputer -** Designed, built and programmed a Hashcat supercomputer for fast password recovery and penetration testing apps, devices and servers. The computer utilizes 10 Graphics Cards to handle the massive calculations from Hashcat during the password/hash recovery process. I overcame CPU Lane bottleneck by spreading hardware connections across all lanes evenly and calculated the power required of each hardware device and utilized hardware that did not exceed a certain wattage

2. **Software defined radio** - Able to view and capture data from radio transmissions to test vulnerabilities and packet encryption. Created virtual radio devices within the GNU Radio program for testing radio-controlled devices and their security. This involved tuning to certain radio frequencies that are intermittent causing packet loss and correctly configuring GNU Radio modules to work properly with external hardware.

3. **3D Printing** - Ability to create and design 3D object files in AutoCAD or a similar program. Experience with Slicer software - for slicing 3D object files into individual layers and setting parameters the 3D printer can understand and use to print the object. Experience with both FDM (fused deposition modeling) and SLA (stereolithography) 3D Printers. Determining the melting temperature and consistency to set up material parameters in the slicer software.

4. **Quadcopter Drones** -Designed, engineered and programmed Quadcopter drones for reliable long flights (30mins), and high-quality video recordings (4k cameras, stabilized and controlled by a gimbal). Experience building both 4G controlled drones(with a companion computer on board) and long-range radio-controlled drones; both using Pixhawk 4 autopilot flight controllers. Ability to pilot drones safely, and within the local laws. Calculating all up weight, electrical consumption of the hardware, and motor thrust of the aircraft for the highest efficiency possible. Designing a frame that is both rigid and light. Configuring the 4G companion computer to communicate with both the PC and the Flight controller with lowest latency possible. Programming the remote controls on the aircraft, remote and on-screen display (camera). Tuning the aircraft for smooth flight.

5. **Raspberry Pi** - Built a "wake on lan switch" with a Raspberry Pi Zero, using python and an LED button. Used for turning on all computers in an office from a light switch. Built Octoprint 3D printer controllers to monitor and control each 3D printer from a PC, using Raspberry Pi 3B+. Created a companion computer (for a 4G drone) with a raspberry pi 4b, to control and operate the drone thru the 4G cellular network by a PC.

6. Worked as an I.T. for various individuals and businesses