

## Michael Koger Darden

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### EDUCATION

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#### Bachelor of Science, Electrical and Computer, Aug 2018

The University of Texas at Austin

GPA: 3.76/4.00

#### Related Courses

Embedded Systems, Software Design and Implementation (I & II), Circuit Theory, Linear Systems & Signals, Algorithms, Probability, Electromagnetic Engineering, Real-Time Digital Signal Processing, Digital Image & Video Processing, Principles of Data Science, Data Science Lab, Honors Senior Design, Automatic Control

### WORK EXPERIENCE

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#### Student Technician, UT LAITS

06/18 – 08/18

- Performed daily morning checks of classroom technical equipment
- Handled customer support calls and helped resolve technical issues

#### Student Technician, UT Applied Research Laboratories

06/16 – 08/16

- Setup *GitLab Continuous Integration* (CI)
- Wrote scripts in *Bash* to facilitate CI testing

### ACADEMIC EXPERIENCE

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#### Honors Senior Design Project, The University of Texas at Austin

11/17 – 05/18

- Helped develop an automated team-formation web application for UT faculty
- Developed multiple algorithm implementations, eventually cutting runtime down by 10x
- Documented all steps of the design, research, and implementation process

#### Software Engineering and Design Lab, The University of Texas at Austin

01/18 – 05/18

- Created a webapp using *flask* and *materialize* that gives you cocktail recipes from on-hand ingredients
- Created an *android* app that finds the current time at a location using Google *geocoding* and *timezone APIs*
- Created an online blog website using *Java* and *Google App Engine*

#### Data Science Lab, The University of Texas at Austin

01/18 – 05/18

- Attempted to generate new Pokémon with a *convolutional GAN*, used *tensorflow* and *Microsoft Azure*
- Performed data visualization, preprocessing, feature engineering/analysis, and machine learning in mock *Kaggle* competition

#### Digital Image Processing Project, The University of Texas at Austin

11/17 – 12/17

- Implemented motion tracking on stationary videos to extract objects of interest
- Worked with *MATLAB* image processing and computer vision libraries

#### Principles of Data Science Project, The University of Texas at Austin

10/17 – 12/17

- Predicted outcomes of baseball games using player statistics
- Worked with *Ensembles*, *XGBoost*, and other models from *scikit-learn*
- Achieved an average accuracy higher than home-team baseline

#### Real-Time DSP Lab, The University of Texas at Austin

01/17 – 05/17

- Designed and implemented digital FIR and IIR filters
- Simulated software-defined radio and Implemented PAM transceivers
- Worked with signal generators, oscilloscopes, *MATLAB*, and *TI Code Composer Studio*

#### **Software Design Project, The University of Texas at Austin**

06/16 – 08/16

- Created a graphical critter simulator using *Java*
- Learned how to use java Reflection and *JavaFX* libraries as well as *Scene Builder*

#### **Embedded Systems Project, The University of Texas at Austin**

04/15 – 05/15

- Created a “tag” video game on the *TM4C123 microcontroller* using *C* and *ARM assembly language*
- Placed in “supreme” category

#### **Robotathon 2015, UT Robotics and Automation Society**

10/15 – 11/15

- Created a robot car to play RAS-ball
- Programmed in *VIM*

#### **Robot Car Project, The University of Texas at Austin**

10/14 – 12/14

- Programmed in *Labview* and built breadboard circuits
- Interfaced photoresistors and IR sensors

### **PERSONAL PROJECTS**

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#### **Gravity IO Game**

07/18

- Created an online multiplayer IO game using *Node.js* and *socket.io* with chat and leaderboard features
- Worked with *HTML5 Canvas* elements and *Javascript prototype inheritance*

#### **HackTX 2017, The University of Texas at Austin**

10/17

- Created an accessible web-archive of dance videos hosted using *nginx*
- Worked with *flask* to populate page templates from a CSV database

#### **Personal Server**

08/16

- Setup a Proxmox server to host chat, game, and web servers
- Setup Linux containers, VMs, and SSH with RSA encryption

#### **3D design**

- Designed an infinity-standing-desk using *SOLIDWORKS* and *Git*
- Designed and *3D printed* a formicarium using *SOLIDWORKS* and *MakerBot*

07/16

04/16

#### **Arduino Projects**

- Created an internet controllable desk-light using *Javascript* and *PHP*
- Created a Bike-Wheel Display using *Image Processing*
- Created a *5V DC power supply*

09/16

02/16

12/15

#### **HackTX 2015, The University of Texas at Austin**

09/15

- Created a static website using *HTML/CSS*
- Worked with *GitHub*

### **SKILLS**

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Experience with *Git*, *Vim*, *Java*, *C*, *C++*, *Bash scripting*, *MATLAB*, *Assembly language*, *Labview*, *TI Code Composer Studio*, *Python*, *TensorFlow*, *Google App Engine*, and *Android*  
 Proficient in *Windows*, *OS X*, and *Linux*

Experience with *soldering* and breadboard-circuits

Experience with *Arduino*, *Launchpad microprocessors*, and *TI TMS320C6700 Digital Signal Processors*

Experience with responsive *HTML/CSS* web-design, *Bootstrap*, *Javascript*, *PHP*, *flask*, and *Node.js*

Experience with *GIMP* and *Photoshop*

Experience with *SOLIDWORKS* 3D design

Familiar with *Spanish* and *Portuguese*

Familiar with *Mandarin Chinese*

## **ACCOMPLISHMENTS**

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*Texas Tricking Club President*, 2017 – 2018

*UT Social Dance Class Assistant*, 2016 – 2018

*Huawei Seeds for the Future* Participant, 2017

Volunteer: English teacher in Peru, 2014

Volunteer: Veterinary assistant at Cape Town SPCA, 2013

*Drumline Lieutenant*, Outstanding Leadership Award, 2012-2013

*Eagle Scout*, 2009