

Clint Dunn

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Education:

University of Wyoming, Laramie WY:

M.S. Mechanical Engineering; August 2018; GPA 4.0
B.S. Mechanical Engineering (ABET accredited); May 2016
B.S. Animal Science, Mathematics minor; December 2012

Engineering Experience:

Nov 2017 – Oct 2018 (intermittent):

Python Freelance Software Development; Laramie, WY

Part time freelance software development optimizing mass spectrometry deconvolution software. Focused on improving existing code base by increasing the efficiency of numerical routines and correcting logic. In this work I relied heavily on the Python libraries numpy, matplotlib and scipy.

2016:

Ball Aerospace; Boulder, CO

Full-time summer technical intern in Cryogenics and Thermal Engineering Department. Converted legacy heat exchanger analysis software from FORTRAN to Matlab and increased its functionality. Used the computational thermal modeling tool Thermal Desktop to verify PID parameters for spacecraft heater controllers. Utilized Thermal Desktop on a separate project to appropriately position heaters while minimizing power consumption.

Graduate Research Experience:

2016-2018:

Graduate Research Assistant; Laramie, WY

Modeled turbulent reactive multiphase flows with the open source computational fluid dynamics package OpenFOAM. Focused on developing and implementing new coal particle devolatilization, multiphase thermodynamic, and soot evolution models within the existing C++ object-oriented framework of OpenFOAM. Utilized Python frequently in preliminary simulation calculations, post-processing and general scripting capacities.

Software Projects:

reReddit (rereddit.clintdunn.org and rereddit.api.clintdunn.org)

This web project is a clone of the reddit website and consists of a Django Rest Framework backend api that is consumed by a single page React frontend application. The project mimics the functionality of the reddit website; users can register, create content and comments, and subscribe to subreddits. The React state management is handled with Redux and JavaScript ES6 syntax is utilized throughout. The major design goals of the Django Rest Framework api are to provide a RESTful api interface and efficient database access. A demo of the site is deployed on an AWS EC2 instance using NGINX and PostgreSQL.

Personal Website (clintdunn.org)

My personal website was developed with Django and is hosted on an AWS EC2 instance with NGINX and PostgreSQL. It houses some articles I have written about C++, Python, and web development. You can also find some more information about me there and links to my other software/social media accounts.

Undergraduate Research Experience:

Turbulence Model Optimization; Laramie, WY

Aided advisor in efforts to optimize his computational fluid dynamics turbulence model utilizing Python optimization libraries from scipy and numerical routines from the numpy library.

EPSCoR Undergraduate Research Fellow; Laramie, WY

Investigation of bacterial pre-processing of lignocellulosic biomass and its subsequent pyrolysis.

Wind Tunnel Design Capstone Class Project; Laramie, WY

Part of a team assigned to design and manufacture an instructional wind tunnel for the University of Wyoming. Individual contributions involved nozzle design as well as test section instrumentation development and CAD modeling with SolidWorks.