# Zane Dufour

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I intend to pursue software engineering positions.

## EXPERIENCE

**Ford Motor Company**
Software Lead
Dearborn, MI
February 2020 - Present

Development work on Ford's Machine Learning platform. Improve development and deployment of modeling microservice in high performance computing kubernetes cluster. Integrated modeling microservice with data pipelines. Designed interface for the platform's python SDK. Designed pipeline for open-source python package approvals. Directly supported data science teams.

**Ford Motor Company**
Analytics Developer
Dearborn, MI
November 2017 - February 2020

Developed likelihood-to-purchase models for tens of millions of individuals. Helped the team adopt Github for version control. Created a python package to streamline the process of accessing pyspark computing resources. Successfully encouraged team to adopt test-driven-development and static code analysis for our python libraries and flask services.

**Disney Imagineering**
Software Engineering Intern
Glendale, CA
June-September 2017

While working in the Disney Imagineering Media and Art Pipeline group, I developed software used for projection mapping in Disney parks and resorts. I built a continuous integration system for multiple interdependent applications which were used for different parts of the projection mapping pipeline.

**Intel**
Software Engineering Intern
Santa Clara, CA
February-August 2016

During this six month internship at Intel, I developed manufacturing and design tools for the Silicon Photonics group. While on this team, I added an exception-handler and a sqlite logging system. This was the first time I maintained a large code base and learned about writing reusable code.

**UC Berkeley**
Research Assistant
Computational Geometry
Summer 2015 - Fall 2016

While working as an undergraduate research assistant, I worked on a spectral geometry morpher in C++ and a Houdini tool for generating parameterized geometry.

## EDUCATION

UC Berkeley,
May 2017

Double Bachelor's – Applied Math and Physics
GPA 3.4

## COURSES

**Machine Learning**

Built various machine learning models from scratch in Python w/ NumPy. This included Character Recognition models, SVMs, Neural Networks, Gausian Discriminant Analysis, Decision Trees and Random Forests.

**Spectral Methods in Computational Fluid Dynamics (Graduate)**

Used NumPy to find numerical solutions to Poisson and Navier-Stokes Equations. Implemented Runge-Kutta finite step methods, Fast Fourier and Chebyshev transforms.

**Advanced Linear Algebra**

Diagonalizing Matrices; Isomorphic Vector Spaces; Inner product spaces; change of basis; Singular Value Decompositions

**Analytical Mechanics**

Lagrangian and Hamiltonian Mechanics; Orbital Mechanics; Chaos and Instability; Rigid-Body kinematics