

# Dan Zheng

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## EDUCATION

### PURDUE UNIVERSITY

BS in Computer Science

College of Science

December 2018 | West Lafayette,  
IN

Cum. GPA: 3.79 | CS GPA: 4.0

#### Tracks

Machine Intelligence

## LINKS

Github:// dan-zheng

LinkedIn:// dan-zheng

## SKILLS

### PROGRAMMING

Swift • C/C++ • Python • Scala

Kotlin • Java • Perl • JS

### MACHINE LEARNING

TensorFlow • PyTorch

NLP (coref, text classification)

Data Augmentation (audio, text)

ASR (CTC decoding, KenLM)

### OTHER

LLVM • CMake • Docker

Bash/Zsh • Git • HTML/CSS

SQL • MongoDB • Regex

Vim • L<sup>A</sup>T<sub>E</sub>X

## LEADERSHIP

### CS 190 - CS TOOLS

Teaching Assistant

Fall 2016 - Spring 2017

Taught CS freshman to use UNIX  
commands and Git

### IGNITE THE FLAME

Peer Mentor

Fall 2016

Guided CS freshman with creating  
full-stack web app

## COURSEWORK

Data Structures &amp; Algorithms

Software Engineering

Systems Programming

Competitive Programming

Intro to Artificial Intelligence

Compilers: Principles &amp; Practice

Data Mining &amp; Machine Learning

## EXPERIENCE

### GOOGLE BRAIN | Software Engineering Intern

January 2018 - Present | Mountain View, CA

- Worked on Swift for TensorFlow, a project adding first-class language support for machine learning in Swift
- Contributed to the TensorFlow library in Swift, automatic differentiation, Python interoperability, and the CMake build system

### THE DLVM PROJECT (DLVM.ORG) | Key Contributor

Summer 2017 - Present

Research Project: Compiler Infrastructure for Deep Learning Systems

- **DLVM:**
  - Implemented key general-purpose and domain-specific optimization passes on DLVM's SSA linear algebra IR
  - Set up testing infrastructure using LLVM Integrated Tester and FileCheck
- **CoreTensor:** a tensor library featuring shaping, storage, indexing, slicing, linear algebra shape transformation, and collection behavior
- **NNKit:** a tagless-final neural network DSL embedded in Swift focusing on type safety and developer experience

### DIGITAL REASONING | NLP/Deep Learning Intern

May 2017 - Aug 2017 | Nashville, TN

- Created Turby, a library providing data augmentation for text to improve performance of NLP/ML models
- Improved Japanese ASR model with custom CTC scorer implementation
- Built phrase-based Japanese language models for use with ASR model

### PURDUE UNIVERSITY | JavaScript/Perl Programmer

Oct 2015 - May 2017 | West Lafayette, IN

- Worked with Purdue physics and math departments to create interactive data visualizations and dynamic problems

## PROJECTS

### TURBY | Creator

Summer 2017

Python Library

- Created and Dockerized library providing data augmentation for text using diverse strategies (spelling, near words, coreference, dependency)
- Tested Turby with fasttext/PyTorch models and measured improvements in precision and recall

### LMUTILS | Creator

Summer 2017

Python Library

- Created and Dockerized collection of tools for building n-gram language models with KenLM, usable via CLI or Python API
- Added support for multiple languages (English, Japanese, Spanish)

### MEETCHU | Co-Creator

Spring 2017

Full-stack Web Application

- Co-created Meetchu, a real-time messaging and meeting app for study groups written with Node.js/Express, MySQL, Socket.io, Vue.js