

# ASHWIN MISHRA

San Diego, California

☎ 330-397-8589 ✉ [asmishra@ucsd.edu](mailto:asmishra@ucsd.edu) 🌐 [github.com/ashwin9999](https://github.com/ashwin9999)

## Education

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### University of California San Diego

August 2021 – December 2022

Master of Science in Computer Science — GPA: 4.0/4.0

La Jolla, CA

### Youngstown State University

August 2016 – May 2019

Bachelor of Science in Computer Science — GPA: 4.0/4.0

Youngstown, OH

## Experience

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### UCSD - Department of Cognitive Science

June 2022 - Present

Teaching Assistant

La Jolla, CA

- Assist in designing course materials and grading projects for COGS 9: Introduction to Data Science.
- Hold discussion sections and live coding demonstrations for the students.

### SenSource Inc.

June 2019 – April 2021

Software Engineer

Austintown, OH

- Developed *SafeSpace* - a real-time occupancy-monitoring app - to prevent overcrowding during COVID-19 pandemic.
- Improved occupancy data retrieval time by nearly **30%** by optimizing SQL queries and caching strategies.
- Reduced deployment time significantly by transforming a monolith into several gRPC-based microservices.

## Research

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### Eye Tracking | Java, JavaScript

May 2017 - June 2018

- Led the development of **iTrace** - a software that implicitly gathers eye gazes and maps them to the screen elements.

*Drew T. Guarnera, Corey A. Bryant, Ashwin Mishra, Jonathan I. Maletic, and Bonita Sharif. 2018. iTrace: eye tracking infrastructure for development environments. DOI: <https://doi.org/10.1145/3204493.3208343>*

## Projects

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### Fault-tolerant Data Store - SurfStore | GoLang

May 2022

- Developed a DropBox clone, called SurfStore, using RAFT protocol - a consensus algorithm for managing replicated log.
- Implemented a gRPC system to hold leader election, heartbeat timers and enable persistent storage upon crashing.

### Twitter data analysis using PySpark | Python, PySpark

May 2022

- Optimized RDD operations to compute relative popular tweets in user groups (10GB) in less than four minutes.
- Improved the tweet-analysis time significantly by utilizing map, reduce and caching techniques.

### Recommender Systems | Python, PyTorch

November 2021

- Developed a sequential prediction model that recommends users new places to visit based on previous visits.
- Implemented a FPMC model (content and geographical features) on Google reviews, beating state-of-the-art models.

### Speech Recognition | Python, TensorFlow

May 2019

- Developed an end-to-end speech recognition application that converts speech to text using deep CNN.
- Implemented sequence annotation without alignment that is on par with CTC but simpler.

## Skills

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**Languages:** Python, Golang, JavaScript, C++, Java

**ML framework/libraries:** TensorFlow, PyTorch, NLTK, scikit-learn, pandas, numpy, scipy, PySpark

**Web framework/libraries:** Angular 2+, React, Ionic, Koa.js

**Databases:** MongoDB, PostgreSQL, CouchDB

**Developer Tools:** VS Code, Android Studio, RStudio, Jupyter

**Other Technologies:** Linux, Jenkins, Git, Docker, Kubernetes

## Achievements

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- Ranked 85th percentile in the Kaggle competition for predicting recipe ratings from *Food.com* (2021)
- Awarded *President's Scholarship* for undergraduate education (2016 – 2019)
- Awarded *Best Demo* at the ACM Symposium on Eye Tracking Research & Applications (ETRA) (2018)
- Awarded *Most Valuable Person in a Team* in Software Engineering course at Youngstown State University (2017)