

# ASHWIN MISHRA

La Jolla, California

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## Education

### University of California - San Diego

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

August 2021 – present

La Jolla, CA

### Youngstown State University

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

August 2016 – May 2019

Youngstown, OH

## Experience

### SenSource Inc.

Software Engineer

June 2019 – April 2021

Austintown, Ohio

- 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

### 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

### 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.

### Reinforcement Learning | Python

October 2021

- Improved the win-rate of the agent in *Blackjack* from **15%** to **60%** using Temporal difference and Q-learning.
- Implemented expectimax algorithm with a combination of successful heuristics for the game of 2048 (Max score: 45000).

### 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.

### Textual Sentiment Analysis | Python, NLTK, JavaScript

February 2019

- Developed a Chrome extension that analyzes the sentiments behind professor reviews.
- Implemented a model for sentiment analysis using Multinomial Naive Bayes algorithm and TF-IDF.

## Skills

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

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

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

**Databases:** MongoDB, PostgreSQL, CouchDB

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

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

## Achievements

- 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)