# ATHARVA BARWE

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## OBJECTIVE

Enthusiastic programmer seeking to showcase my coding skills at an entry-level position with opportunities for career growth. Keen to apply my caliber in Python, Machine Learning, and Data Science

## EDUCATION

**Ira A. Fulton Schools of Engineering, Arizona State University** August 2021-May 2023

Master of Science in Computer Science (MS)

**Relevant Coursework** - Artificial Intelligence, Natural Language Processing, Statistical Machine Learning, and Mobile Computing

**Thadomal Shahani Engineering College, University of Mumbai** August 2017-May 2021

Bachelor of Engineering in Computer Engineering (BE) CGPA: 8.61/10

**Relevant Coursework** - Machine Learning, Database Management Systems, Advanced Algorithms, and Software Engineering

## TECHNICAL SKILLS

- **Tools and Softwares**: Microsoft SQL Server, Google Colab, Jupyter Notebook, Tableau, R Studio, Kanban, and Microsoft Office
- **Libraries**: Scikit-learn, PyTorch, TensorFlow, Keras, Matplotlib, Pandas, Scipy, and Numpy
- **Certifications**: Deep Learning specialization from deeplearning.ai, Machine Learning certification from NPTEL, Python Programming certification from Microsoft
- **Programming Languages**: Python, C, Java, R, SQL, HTML, CSS, Javascript, and Assembly for x86

## PROFESSIONAL EXPERIENCE

**Technical Intern** - *Cloud Counselage* March 2020-July 2020

- Devised an Event Recommendation System that works based on employees' interests
- Built a deep neural network that predicts and matches an event with an employee with an accuracy of 84% by extracting keywords from the event title and description
- Documented the Known Error Database throughout the duration of the internship

**Trainee** - *Air India Ltd.* June 2019-July 2019

- Updated the Flight Management Computer System of the Boeing B787-8 with ensuing flight data
- Monitored the operation of Boeing aircraft engines in the Base Maintenance Division
- Performed preflight maintenance checks in the interiors of the Boeing-747, Boeing-777, and Boeing-787

## ACADEMIC PROJECTS

**Investigating the Impact of Training Data Selection on Calibration and Selective Prediction - ASU**

- Aimed to enhance the generalization potential of the BERT model on unseen data
- Implemented Selective Prediction by segregating the CommonsenseQA dataset based on the difficulty of its training examples
- Generated confidence files that provided insight into the model's Selective Prediction performance

**Monte-Carlo Tree Search in the Pacman Domain - ASU**

- Explored the performance of the MCTS algorithm in the Pacman domain and compared it against Reflex, Minimax, Alpha-Beta, and Expectimax agents in a wide range of Pacman game environments
- Concluded that the base MCTS agent's 16.67% win rate is severely outclassed by the aforementioned agents' win rates between 72% and 100% over a variety of Pacman mazes, with difficulties 'Easy', 'Medium', and 'Hard'
- Created an improved version of the MCTS agent with a performance faster by at least a factor of 24, by augmenting the agent with a basic neural network; leaving plenty of room for future improvement

**Agricultural Produce Price Prediction using Deep Learning - TSEC**

- Developed an application estimating crop prices for farmers based on the time and location
- Constructed 18 experimental neural network architectures utilizing the TensorFlow library and trained them on 1.5 million rows of data collected over 20 years across India
- Conducted Comparative Analysis to ascertain the best structure for each crop, resulting in predictions that were within 9% of the true values on average
- Formulated a mobile application by employing Android Studio to make the model accessible to a layperson

**Movie Recommendation System - TSEC**

- Designed a movie recommendation system that worked based on either previous viewings or similarities between movies
- Employed the MovieLens dataset consisting of names, genres, and ratings of movies
- Implemented content based filtering using the K-means algorithm and collaborative filtering using a Support Vector Machine

## EXTRACURRICULAR ACTIVITIES

- Organized a national mathematical conference during my undergraduate degree in 2019
- Volunteered at 'Welfare of Stray Dogs', a non profit organization dedicated to the rehabilitation and rehoming of stray dogs
- Reduced e-waste from my junior college by 28% with the 'Tronics' committee over 2 years