# Kuntal Roy

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## EDUCATION

**THE OHIO STATE UNIVERSITY**
MS in Computer Science
Expected May 2021 | Columbus, OH
CGPA: 3.95/4.0

**INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, SHIBPUR**
Bachelor of Engineering in Electronics & Telecomm.
May 2015 | Howrah, India
CGPA: 8.79/10.0 (Rank 7/45)

## SKILLS

**PROGRAMMING**
Proficient:
Java • Python • C • SQL • Git
Shell • SAS • R • MATLAB

Familiar:
JavaScript • HTML/CSS • Golang
PHP • C++ • Docker • Jira (Agile)

Libraries & Tools:
PyTorch • TensorFlow • NumPy
Spring Boot • JUnit • Mockito
Django • Flask • REST API
MySQL • Teradata • MongoDB
GCP • AWS • Spark • ReactJS
Tableau • RShiny • Bootstrap

## COURSEWORK

**GRADUATE**
Algorithms & Data Structures
Advanced Operating Systems
Programming Languages
Distributed Enterprise Computing
Mobile App Development
Discrete Structures
Data Mining
Machine Learning
Neural Networks
Speech and Language Processing

## EXTRA CURRICULAR

• **Impact Award 2018** by Mu Sigma for workshop on ML use cases in medicine
• **Mentored** new joinees at Mu Sigma on classification algorithms in Python
• **GAABESU Leadership Award 2013** for winning IEEE paper presentation 3 times
• **Core Team** member, **Instruo 2014**, the annual tech fest of IIEST, Shibpur
• Ranked **598** in **IPSC 2012** Challenge
• **INSPIRE 2011** scholarship recipient

## EXPERIENCE

**SAFE AUTO** | Software Engineer Intern
May 2020 – Present | Columbus, OH
- Developing a robust algorithm for **paid search advertisement bidding strategy** to optimize marketing spends [Google Ads API, PySpark, Pandas]

**OSU COLLEGE OF SOCIAL WORK** | Research Assistant
Mar 2020 – Apr 2020 | Columbus, OH
- Designed & deployed a **React app** to view child abuse related tweets, filtered through a **Naive Bayes classifier** for relevance [Django, MongoDB, AWS EC2]

**HSBC HOLDINGS PLC** | Software Engineer
Dec 2018 – Jul 2019 | Kolkata, India
- Designed & developed a web platform to **forecast** different **credit card metrics** to assist the business partners to stay within **20% risk threshold** [React, Flask]
- Enabled relationship managers to drive healthy conversations by designing a web app *Customer360* to generate customer history and insights, leading to **80% less complaints** [Docker, React]

**MU SIGMA** | Software Developer
Aug 2015 – Nov 2018 | Bengaluru, India
- Proactively designed a **web service** to automate the creation and refresh of a **healthcare hierarchy** (~100k relations) in production to assist the shift to account based targeting [Geocoding, REST API development]
- Implemented automated test suites & provided tactical fixes to over **150 bugs** and handled **20k exceptions** in the hierarchy process flow [BPMN, JUnit]
- Automated **90% financial calculations** by developing a **micro-service** architecture & exposing REST APIs [Spring Boot framework, Hibernate]
- Developed and migrated an assortment planning tool to a **Data Lake** based architecture [BigQuery, Spark] to improve weekly to daily data refreshes

## PROJECTS

**QUANDARY INTERPRETER** | Feb 2020 - Apr 2020
Designed and implemented the parser and interpreter to develop a programming language *Quandary* (**Lisp**-like semantics) in **Java** from scratch, with in-built features like static & dynamic checking, garbage collection and concurrency [JFlex, CUP]

**MATH WORD PROBLEM SOLVER** | Oct 2019 - Dec 2019 ⭘
Constructed and solved mathematical equations from word problems scraped from Yahoo answers • Achieved an **accuracy of** ~54% by matching equation templates using **sequence trees** and **Bi-LSTM Recursive NN** architecture [PyTorch, Pandas]

**PLAGIARISM DETECTOR** | Oct 2019 - Nov 2019 ⭘
Generated set of signatures using min hashing technique to bucket similar documents structures together to reduce further comparisons by **85%** [NLTK, SciPy]

**AD2CHARITY** | Nov 2019 (Most impactful hack @ HACK OHI/O 2019) ⭘
Developed a **chrome extension** that incentivizes users to donate to charity by giving them a discount on watching an advertisement video [Bootstrap, Node.js, Express]

**MOVIE REVIEW CLASSIFICATION** | Aug 2019 - Sep 2019 ⭘
Classified reviews on IMDB, Amazon & Yelp as positive, negative and neutral with ~87% accuracy • Used **GloVe embeddings** in deep neural net structures (**CNN** and **FFNN**), **Naive Bayes** and **Perceptron** models were tested as baselines [TensorFlow]