KUSHAL BATRA

kbatra2@ncsu.edu ||| 9193961299

Raleigh,NC USA || linkedin.com/in/kushal-batra || github.com/s0nicboOm

EDUCATION

- **NORTH CAROLINA STATE UNIVERSITY, RALEIGH** — *May 2019 - Jan 2021(expected)*
  Master of Computer Science — ***CGPA :4***
- **SRM UNIVERSITY, KATTANKULATHUR** — *July 2015 - August 2019*
  B. Tech in Computer Science and Engineering — ***CGPA :4***

WORK EXPERIENCE / POSITIONS OF RESPONSIBILITY

- **Software Engineer Intern - VALVOLINE CUMMINS, INDIA** **(*Dec 2018 - Feb 2019*)**
  Maintained and developed Salesforce platform for the company's client. It was like a CRM platform developed using inbuilt salesforce tools and some coding in Apex.
- **Software Engineer Intern - WIPRO PRIVATE LIMITED, INDIA** **(*Jun 2017 - Jul 2017*)**
  Implemented SAP ABAP Reports and Smart form. Worked on all 7 types of reports: Interactive and Classical Report. Also worked on creating customizable objects for the client using C++.
- **Machine Learning Intern – COLLABORATIONS PHARMACEUTICALS, USA** **(*May 2020 - Jul 2020*)**
  Developed ML models along with SMILES for drug discovery. Worked especially with the COVID-19 data and made predictions for compounds to check whether they will be active against the virus. Also, implemented the SVM and Deep Learning model for the same on IBM Qiskit to compare the results.

PROJECTS AND PAPER PRESENTATIONS

Machine Learning:

- Working on ROS systems to create a miniature model of a building for quality inspection purposes using KINOVA robotic arm.
- Using computer vision and machine learning created a driver less car prototype is build using a truck simulator game. Won most innovative project along with runner up prize for this project in the hackathon.
- Implemented A* algorithm by making a novel heuristic function to solve min coin change problem.
- Worked on masked RCNN and fast CNN to detect human ear from the live video capture.
- Worked on TensorFlow, Keras and MATLAB's deep learning toolkit to implement CNN on breast cancer images and compare and analyse the results.

Software Development:

- Designed a Library Management System using CSS, JavaScript, JSP XML and PHP as backend.
- Worked on embedded software systems (Raspberry Pi and Arduino) to create a lap counter for a hybrid vehicle team.
- Designed a weather-based clothes, activity and food recommendation application which also had COVID-19 tracker inbuilt.
- Worked detecting and mitigating the vulnerabilities on OpenMRS webapp using tools- Fortify, Coverity, Snyk, Zap, Defensics, OWASP Dependency, Seeker.

PAPER PRESENTATIONS

- Published a paper in IEEE conference on "Classification of Mammogram Images: A Survey".
- Published a paper in Springer "Breast Cancer detection using CNN on Mammogram Images".
- Research in biometrics field - Ear detection and Authentication research paper - "Feature Extraction of Human Ear based on enhanced Active Contour method".

TECHNICAL SKILLS

- **Languages:** C++, Python, R, TensorFlow, OpenCV and PostgreSQL
- **Web Development:** HTML, JavaScript, CSS, XML and PHP
- **Operating System:** Windows and Android
- **Certifications:** Neural Networks and Deep Learning, R Programming and Python Series

COURSES OF INTEREST

Courses already taken: Quantum Computing, Graph Theory, Software for Robotics, Software Engineering, Algorithms and Analysis, Software Security.
Courses this Semester: Software Testing, Advanced Machine Learning and AR/VR.
Interests: ML/AI, Data Structures and Algorithm Analysis.

EXTRA CURRICULAR ACTIVITIES

COMPETITIVE PROGRAMMING / HACKATHONS:

- Active participant in competitive programming.
- Qualified till 3rd round in Google Code Jam 2017 and 2018.
- Received 3rd prize in SRM Hackathon.
- Participated in IET Hackathon.

CLUBS AND SPORTS:

- Team member of 1.618 (Hybrid vehicle team) at SRM.
- Working with RAVE! NCSU event planners. (Part time job)
- Taught middle school students for NGO - Teach for India.
- Represented soccer club at inter-club soccer championship.

Interests: Anime, Soccer, Poker and CS: GO