

KAUSHAL KUMAR RAI

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EDUCATION

- **University of Wisconsin - Madison** Madison, WI
Masters of Science in Computer Science Sept. 2021 – (Exp.) Dec. 2022
- **Netaji Subhas Institute of Technology, University of Delhi** New Delhi, IN
Bachelor of Engineering in Computer Engineering; GPA: 9.04/10 (Merit Scholarship) Aug. 2015 – May. 2019

TECHNICAL SKILLS

- **Languages:** C++, Java, JavaScript, Python, Go, Kotlin, HTML, CSS, SQL
- **Tools and Technology:** AWS, Hadoop, Map-reduce, Kubernetes, Docker, Spark, TensorFlow, PyTorch, Jetbrains

EXPERIENCE

- **Goldman Sachs, Analyst** Bangalore, IN
GSAM Surveillance Engineering Team, Compliance Division Apr 2020 - Aug 2021
 - Enhanced the precision of surveillance codebases (approximately 30%) by improving the underlying mathematical model being used. This significantly reduced the manual work required at Compliance Officer's end.
 - Improved the coverage of surveillances by including foreign exchange products in scope for Fixed Income trades.
 - Developed a codebase to add surveillance logic to a new order management system (OMS). Ensured code compatibility across surveillances and data sourcing tasks to handle new OMS.
- **Samsung R&D, Software Engineer** Bangalore, IN
Rich Communication Suite and Messaging as a Platform Team Jun 2019 - Apr 2020
 - Enhanced chatbots by including the ability to share audio and video messages. This feature allowed 3rd party businesses to on-board native messaging application of Samsung handsets and share enriched content.
- **Amazon, SDE Intern** Bangalore, IN
GiftCard-Cashback Issuance Team, Platform Development Team May 2018 - July 2018
 - Developed a framework to transfer failing orders (about 200K/day) during Prime Day to manual giftcard issuance.
 - Designed and developed a system to automate redirection of trouble ticket to responsible tech team.

RESEARCH PROJECTS

- **Detecting Hate Inducing Memes in Code Switched Language:** CNN, LSTM Dec 2020 - Aug 2021
 - Introduced a novel triply annotated Indian political Memes (IPM) dataset, which comprises memes from various Indian political events that have taken place post-independence. [Github Link](#)
 - Proposed and implemented a binary-channeled CNN and LSTM based model wherein the images are individually processed using the CNN model and the text extracted from the images using the LSTM model. This model gives state-of-the-art results in the domain of offensive image (Memes) classification in code-switched languages.
- **Automated Code Analysis and Grading:** Python, Machine Learning, NLP, LLVM Sep 2018 - May 2019
 - Developed an open source codebase that grades quality and logic of C/C++ codes using feature extraction on a combination of control flow graph and data flow graph. Published a reserach paper documenting our approach.
 - Evaluated the performance of different ML models (including SVM, Linear Regression, Ridge Regression and Ordinal Regression) on our novel dataset consisting of multiple coding responses to obtain optimal results. [Github Link](#)

OTHER PROJECTS

- **Speech to Code Generator:** Node.js, NLP, Microsoft LUIS, BraveyJS Jul 2019 - Sep 2019
 - Developed an end to end software called 'ChatterBox' to automatically extract the semantics of speech and convert it into a code in the desired programming language (implemented for C++ and Python).
 - The project was ranked in top 10 among 126 proposed ideas for Effithon (Samsung's internal hackathon).
- **Medical Appointment System ('Upchaar'):** Javascript, Django, Android, Rest API Jan 2018 - Apr 2018
 - Developed a central portal for Patients, Doctors and Hospitals to manage and provide efficient healthcare with provision for follow-up, rescheduling and SMS or app notifications. [Github Link](#)
 - The project was shortlisted for the finals of Smart India Hackathon 2018, organised by the Government of India.
- **Food Court Management System:** Node.js, HTML, CSS, MySQL Jan 2018 - Apr 2018
 - Designed a website for a food court management system that facilitates administration of multiple restaurants, menu updation, employee management and order placement. [Github Link](#)

PUBLICATIONS

- K. K. Rai, et. al "Question Independent Automated Code Analysis and Grading using Bag of Words and Machine Learning," 2019 International Conference on Computing, Power and Communication Technologies (GUCon), 2019. [Link](#)