

# Raj Kumar Shrivastava

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Graduate student in Computer Science with strong programming skills and research experience passionate about contributing to the community with impactful work in software development and machine learning.

## EDUCATION

**Master of Computer Science**, GPA: 4.0/4.0

North Carolina State University

August 2019–May 2021

Raleigh, NC

**Bachelor of Technology in Computer Science**

Dr. A.P.J. Abdul Kalam Technical University

August 2014–May 2018

India

**Relevant coursework:** Software Engineering, DevOps, Design and Analysis of Algorithms, Data Structures, Object-oriented programming, Database Management System, Operating System, Neural Networks

## TECHNICAL SKILLS

- **Languages:** Python, C++, C, MySQL, Bash scripting, HTML, CSS, JavaScript, Java
- **Libraries and tools:** Git version control, Vim, Docker, Ansible, Node.js, Django, Redis, Flask, REST, TensorFlow
- **Certification:** Machine Learning (Stanford University, Coursera), ID: 79ZVMXKLG7G

## EXPERIENCE

- **Graduate Research Assistant—Innovative Educational Computing Lab** August 2020–Present
  - Automating latent skills' discovery from instructional texts and quizzes in online courses with topic modeling.
  - Developing skill model to predict and track the students' learning of different latent skills in online courses.
  - Integrating the skill model to an online courseware making it adaptive and competency-driven.
- **Summer Intern—Innovative Educational Computing Lab** May 2020–July 2020
  - Coordinated with Carnegie Mellon University's Open Learning Initiative team to parse its courseware's XML data and generated a dataset for skill model mining.
  - Refactored existing codebase for scalability and robustness. Reduced average running time by almost 95%.
- **Junior Research Fellow—Indian Institute of Technology Varanasi** July 2018–June 2019
  - Identified sensitive information in emails with context to the particular organization using a neural network and prevented confidential emails from being sent to wrong addressee with a recall of 0.91.
  - Predicted recipients for the email being composed based on its sender, subject, salutation, message, and statistics of past interactions with 97% accuracy as tested on Enron email dataset.
- **Intern—Defence Research & Development Organization** February 2018–May 2018
  - Developed a light-weight miniature ground robot for surveillance and stealth operations.
  - Deployed on a Raspberry Pi micro-controller with off-board processing to recognize faces, interact and navigate on users' voice commands from remote locations.

## PROJECTS

- **Game development:** Collaborated in a team of three to build a game from scratch in Python with extensive object-oriented programming. Integrated physics like movements, acceleration and collision detection. Simulated human player pursuing a treasure against AI guard bots using path-finding and decision-making algorithms.
- **User profile management API:** Developed API for creating and managing user profiles and feed items using Django REST API framework in Python. Developed with Docker container and deployed on AWS server.
- **Git wrapper:** Simplified git by designing a wrapper for git commands to combine multiple git operations into single commands using Python and bash scripting. Used TravisCI for continuous integration and testing.
- **Simulation of autonomous traffic environment:** Evaluated effectiveness of time-saving strategies for prioritization of emergency vehicles over other vehicles by simulating a futuristic autonomous traffic environment.
- **Semantic Analysis Optimization:** Optimized sentiment classification by incorporating sentiment embedding along with conventional sentiment labels with a feed-forward neural network using TensorFlow.

## ACHIEVEMENTS AND LEADERSHIP

- Awarded full tuition scholarship for Fall'20 and Spring'21 semesters for my contributions as research assistant.
- Guiding students and organizing events as a member of Indian Graduate Student Association of the university.