Ayush Tiwari

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Education

- **Indian Institute of Technology, Kharagpur** — **West Bengal, India**
  Bachelor of Technology in Computer Science; CGPA: 9.81/10 — *Jul. 2017 – May. 2021*
- **Delhi Public School, R.K. Puram** — **New Delhi, India**
  All India Senior School Certificate Examination; Aggregate: 94.6% — *Jul. 2015 – May. 2017*
- **S.H.M.D School, Alipurduar** — **West Bengal, India**
  All India Secondary School Certificate Examination; CGPA: 9.80/10 — *Jul. 2007 – May. 2015*

Skills and Relevant Coursework

- **Languages and Frameworks**: C++, Python, Javascript, Java, PHP, Django, PyTorch, Tensorflow, OpenCV
- **Relevant Coursework**: Programming and Data Structures, Algorithms, Machine Learning, Compilers, Computer Organization and Architecture, Formal Language and Automata Theory, Software Engineering, Discrete Structures, Probability and Statistics

Key Projects

- **Blogger**
  A social blog. (Personal Project)
  - Designed and built a fully fledged blogging application with Python Flask including authentication, messaging, following, commenting, up-voting and several other features.
  - Integrated a Recommender System that uses collaborative filtering to display relevant blog posts/authors to users.
  - Implemented automatic Text Summarization using unsupervised learning with skip thought vectors to display only the summaries of relevant posts on user's main page.
  - Currently working on implementing hate speech detection algorithm to automatically flag/remove abusive comments.
- **Cats and Dogs**
  A web application to classify Cats and Dogs. (Personal Project)
  - Designed from scratch, this is a web application that hosts a Convolutional Neural Network.
  - Fine tuned the VGG19 model with tensorflow and keras to specifically classify cats and dogs.
  - The model attained more than 98% accuracy on the test cases after being trained for just 5 epochs.
  - The application also displays some of the intermediate results of filtering for visualization purposes.
- **EasyLogistics**
  Transport company computerisation software. (Software Engineering Term Project)
  - Designed and built a logistic management software entirely using Java.
  - Used UML for design and applied Software Engineering principles and techniques at each step of the project
  - Front end was built completely using JavaFX with inspirations from Google's Material Design.
  - Database management was done using SQLite.

Leadership Experience

- **MatSoc - Delhi Public School, R.K. Puram** — **New Delhi, India**
  Head of Technology — *Jul. 2016 - May. 2017*
  - Served as the head of all technological activities at the Mathematics Society of Delhi Public School, R.K. Puram
  - Led the technological division of MatSoc in conducting the World Mathematical Crusade 2016 at DPS, R.K. Puram.

Research Experience

- **Complex Networks Research Lab, IIT Kharagpur** — **West Bengal, India**
  Undergraduate Researcher — *Jul. 2019 - Present*
  - Currently working on the Natural Language Processing Task of Aspect Based Sentiment Analysis.

Other Projects

- **TinyC (Ongoing)** : As a part of compilers course, implementing a compiler for a C type language using flex and bison
- **ImageNet with Tensorflow.js** : Keeping in mind the privacy of users, this application transfers the model to the browser instead of user's data to the server to make predictions using the MobileNet model.
- **Legal Search Engine** : A natural language supporting search engine to search through the cases of Indian Supreme Court that took place in the last 50 years.

Extra-Curricular Activities

- **Member, NSS** : Served as a member of the National Service Scheme under Ministry of Youth and Affairs, India.
- **Member, PhySoc** : Served as a member of the the Physics Society at Delhi Public School, R.K. Puram.