Adithya Samavedhi

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Education

BITS Pilani	**Aug 2017 - Jul 2021**
Bachelor of Engineering in Computer Science, GPA: 8.71/10.0	*Goa, India*
FIITJEE	**Jun 2015 - May 2017**
Grade XII, Telangana State Board, Passing marks: 96.7%	*Hyderabad, India*

Technical Skills

Languages: Python, C/C++, MySQL, Java, LaTeX, HTML
Frameworks: Keras, PyTorch, SpaCy, Celery, Prometheus, NLTK, Pandas, Django, Flask, Huggingface, FastAPI

Work Experience

Goldman Sachs   **Jul 2021 - Present**
Software Developer | Advisor: Lokesha Rangaswamy   *Remote*
- Working as part of Middleware Engineering Software Architecture team to maintain over of 4000 database hosts.
- Designing applications using FastAPI, Celery to schedule and automate core infrastructure services.

Couture AI   **Jan 2021 - Jun 2021**
AI Intern | Advisor: Durgesh Samant   *Remote*
- Developed a video recommendation system prototype using LightGCN model and collaborative filtering.
- Designed a pipeline for candidate generation and video recommendation for over 20,000,000 videos for 6,000,000 users.

Virginia Polytechnic Institute and State University   **Nov 2020 - May 2021**
Undergraduate Research Intern | Advisor: Prof. Chandan K. Reddy   *Remote*
- Designed a transformer-based model using multi-headed attention layer for Long-Form Document Matching.
- Created two publicly available datasets and implemented four baseline models: HAN, SMITH, ARC-1, DSSM.

Goldman Sachs   **May 2020 - Jun 2020**
Software Developer Intern | Advisor: Anand Sharma   *Bangalore, India*
- Developed an automated SQL capture and analysis platform as part of Middleware engineering team.
- Onboarded logs of all PostgreSQL servers and implemented multi-processing for optimization.

Telangana e-Governance   **May 2019 - Jul 2019**
Software Developer Intern | Advisor: Abhinav Pathak   *Hyderabad, India*
- Created a portal to display the Life Sciences Corridor project of the state government.
- Developed a static website using HTML and Bootstrap framework and handled the front-end development.

Publications

Supervised Contrastive Learning for Interpretable Long Document Comparison [🔗]
*Akshita Jha, Vineeth Rakesh, Jaideep Chandrashekhar, **Adithya Samavedhi**, Chandan K. Reddy*
[Under review], Fifteenth Web Search and Data Mining Conference   [WSDM'22]

Transformer-based Models for Long Document Comparison: Challenges and Empirical Analysis
*Akshita Jha, **Adithya Samavedhi**, Vineeth Rakesh, Jaideep Chandrashekar and Chandan K Reddy*
[Under review], ACL Rolling Review

Profiling Fake News: Learning the Semantics and Characterisation of Misinformation
*Swati Agarwal, **Adithya Samavedhi***
[Accepted], Seventeenth Advanced Data Mining and Applications Conference, Sydney   [ADMA'21]

Robust Malware Detection Models: Learning from Adversarial Attacks and Defenses [🔗]
*Hemant Rathore, **Adithya Samavedhi**, Sanjay K. Sahay and Mohit Sewak*
Forensic Science International: Digital Investigation, 2021   [Digital Investigation'21]

Select Projects

Challenges to Transformer-based Models for Document Comparison   **Nov 2020 - May 2021**
Advisor: Prof. Chandan K. Reddy
  - Performed experiments on Transformer-based models: BERT, Longformer, SMITH and simplistic models: HAN, DSSM, ARC-1 to compare trade-off between resource consumption and performance.
  - Evaluated performance against text perturbation,varying document lengths and varied pre-trained embeddings for document comparison.

Designing Protective Measures against Malware Attacks   [%] [◯]   **May 2020 - Feb 2021**
Advisor: Prof. Hemant Rathore
  - Devised a gradient-based adversarial attack strategy to modify malicious applications achieving 98% fooling rate.
  - Designed a novel defensive strategy to counter adversarial attack by reducing fooling rate by 60%.
  - Validated the strategies for twelve classification algorithms against 50,000 android applications.

Empirical Analysis of Student Feedback   **Mar 2020 - Mar 2021**
Advisor: Prof. Swati Agrawal
  - Constructed a pipeline to automate analysis of feedback across 10 subject streams, 200+ courses, 100+ faculty.
  - Implemented sentiment analysis, clustering across objective responses, knowledge graphs to gain insights.

Identification and Characterization of Fake News   [◯]   **Apr 2019 - Apr 2020**
Advisor: Prof. Swati Agrawal
  - Proposed a Fake News detection model using syntactic, semantic and temporal features to represent articles.
  - Achieved average accuracy of 85% and 97% against benchmark datasets such as ISOT, FakeNewsMaster respectively.

Detection of Malaria from Segmented Human Cell Images   [◯]   **Jan 2019 - Jul 2019**
Advisor: Dr. Partha Saha
  - Constructed malaria detection models by implementing a custom architecture convolutional neural networks in PyTorch and Keras.
  - Evaluated custom architecture against transfer learning models using ResNet150 and VGG16.
  - Achieved 97.2% test accuracy on benchmark dataset consisting of 28,000 blood smear cell images.

Relevant Subjects

Disciplinary Courses: Object Oriented Programming, Data Structures & Algorithms, Database Management Systems, Probability & Statistics, Compiler Construction, Operating Systems, Design and Analysis of Algorithms, Computer Networks, Principles of Programming Languages
Electives: Machine Learning, Artificial Intelligence, Effective Public Speaking, Linguistics

Positions Of Responsibility

Teaching Assistant   **Jan 2020 - May 2020**
BITS Pilani, Goa Campus
  - **Data Structures & Algorithms, Spring'20.** Prof. Swati Agrawal
  - **Database Management Systems, Spring'20.** Dr. Shubhangi Galiwal
  - **Computer Networks, Spring'21.** Prof. Vinayak Naik
  - **Principles of Programming Languages, Fall'20.** Prof. Ramprasad Joshi

Volunteer Experience

Nirmaan (Non-Governmental Organisation) [◉]

Project Head   **Apr 2019 - Apr 2020**
  - Head of the Health Operations team consisting of 20 members at Nirmaan.
  - Responsible for conducting blood donation camps, eye check ups and menstrual awareness sessions in nearby slum areas.

Volunteer   **Aug 2017 - Apr 2019**
  - Volunteer at the Health Operations and Teaching verticals at Nirmaan.
  - Responsible for teaching and conducting health awareness sessions for under-privileged children.