Surya S Dwivedi

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Education

The University of Texas at Austin **Sep. 2019 - May 2021**
Master of Science in Computer Science *GPA: 3.8/4.0*

Indian Institute of Technology(IIT), Kharagpur **May 2015 – May 2019**
Bachelor of Technology in Computer Science *GPA: 9.1/10*

Experience

Member of Technical Staff July 2021 – Present
Oracle Corporation - Spatial Database Org *Austin, TX*

- Working mostly on projects related to 3D spatial data
- Improving performance and correctness of disk based TIN creation, i.e. Delaunay Triangulation for very large spatial point sets
- Implemented Ball Pivoting Algorithm for mesh generation from surface point clouds
- Implemented Polygon Triangulation based on monotone subdivision algorithm, to convert a 3D object consisting of polygons to a triangular mesh.
- Developed functionality to convert Oracle's native TIN/MESH data to cesium 3D tiles format, for visualization using cesium
- Technologies: C, PL/SQL

Google Summer of Code May 2020 – Sep 2020
CERN Geneva *Remote*

- Developed 3D CNN functionality(*link*) in TMVA, a C++ data analysis framework used at CERN
- Implemented forward and backward passes for 3D convolution and max-pooling layers
- For testing backward pass, compared the numerical error with mathematical error obtained using differentiation

Google Summer of Code May 2019 – Sep 2019
CERN Geneva *Remote*

- Developed LSTM/GRU layers functionality(*link*) in TMVA, a C++ data analysis framework used at CERN
- Implemented forward and backward passes for LSTM/GRU layers
- For testing backward pass, compared the numerical error with mathematical error obtained using differentiation

Summer Intern May 2018 – July 2018
Adobe Research *Bengaluru, India*

- Built a system for extracting template from banner images and transferring user content into it
- Work published at ACM IUI 2019(*link*), Los Angeles. Also filed a US patent
- Technolgies: Python, PyTorch, Django(Web Application)

Projects

Memory Resident File System

- Implemented a memory resident file system consisting of inodes, disk blocks that could be accessed using an API
- Technolgies: C

Distributed Log Database

- Implemeted a distributed database for storing application logs, supported read/write and crash-fault tolerance
- Technologies: Python, RPyC

Achievements

- ACM ICPC Chennai Regional 2017: Secured 44th rank in the programming contest
- Regional Mathematics Olympiad - cleared twice in 2013, 2014
- IIT Entrance Exam(JEE 2015) - All India Rank 219, out of close to 1 million candidates
- KVPY 2014 - All India Rank 5 in KVPY, a science fellowship exam