

SHARMILA APPINI

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EDUCATION

Ph.D. in Geophysics, GPA 3.95/4.0 University of Houston, Main Campus	Aug 2020 – Dec 2024 (Expected) Houston, Texas
Micro-credential in Data Science Hewlett Packard Enterprise Data Science Institute	Jul 2022 – Apr 2023 Houston, Texas
Integrated Master's in Applied Geology, CGPA 3.35/4.0 Indian Institute of Technology, Kharagpur, India	Aug 2012 – Jul 2017 Kharagpur, West Bengal

EXPERIENCE

Geoscience Intern | Pioneer Natural Resources **May 2023 - Aug 2023**

- Performed pre-stack simultaneous AVO inversion on four sets of various processed seismic gathers over a ~65 sq.mi. pilot study in the Midland Basin to extract seismic attributes like impedance and density volumes
- Determined the best practice of gather conditioning and seismic data processing by evaluating the inverted volumes using blind test wells, cross correlations and statistical comparisons
- Integrated with the development team by using inversion products to build wellbore stability models, generated a wedge model to demonstrate improved vertical resolution of the Reflection Coefficient volume from the original amplitude volume

Research Assistant | University of Houston **Jan 2021 - present**

- Developed **MATLAB** and **Python** codes to analyze the observed shear wave splitting (SWS) patterns of the 3-C seismograms of global deep earthquakes (>60km) recorded above Japan subduction region, with respect to backazimuth
- Predicted SWS measurements based on the inverted slab anisotropy using propagator matrix method, to compare with the SWS observations obtained from ~760 hi-net stations located above Japan subduction region

Borehole Geophysicist | Data Services Hub | Schlumberger, Mumbai, India **Jul 2017 - Jul 2020**

- Dealt with Borehole seismic projects for clients across various geo-markets (USA, Norway, India, Africa & Middle East)
- Supported projects from processing to interpretation of VSP (Vertical Seismic Profiling) surveys for Imaging
- Part of the real-time Microseismic processing team for Hydraulic fracture monitoring
- Collaborated with the research team of hDVS (or DAS) Technology and worked on hDVS data optimization using Variable Gauge Length Processing to improve signal-to-noise ratio

Data Analytics Intern | Juspay Technologies Pvt Ltd., Bengaluru, India **May 2016 - July 2016**

- Identified key patterns in customer issues and analysed failure transaction behaviour using **Google BigQuery**
- Analysed the trends in lost orders of well-established companies in India, thereby increased overall success rate by 4%

PROJECTS

Prediction of Petrophysical Properties using Neural Networks **Sep 2020 – Dec 2020**

- Built deep learning models using multiple features such as density, impedance, reflectivity, etc. to improve accuracy in velocity predictions ahead of the drill bit
- Experimented with Keras Sequential models (using **TensorFlow**) & Regression models (using **PyTorch**) to minimize loss function

Determination of Wine Quality via Machine Learning Algorithms **Aug 2022 – Oct 2022**

- Developed and compared performance of various models like Decision Trees and Support Vector Machines to estimate wine quality, with help of variables like acidity, alcohol, pH, density, etc.
- Fine-tuned SVM models and improved performance using data transformation techniques like feature extraction and scaling

SKILLS & COURSEWORK

Languages and Tools: Python, MATLAB, SQL, UNIX C Shell, Microsoft Office, Basics of C

Software Platforms: Petrel, Geoframe, Omega, Techlog, HampsonRussel, Paradigm, ESS, RokDoc & Structural Solver

Technical Concepts: Seismic Inversion, Seismic processing & imaging, Seismic-Well Tie, Synthetic Seismogram generation, 2D/3D Velocity Modeling, Structure & Horizon Mapping, Q & Multiples Analysis, AVO/AVA Analysis

Certifications: Introduction to Machine Learning & Deep Learning (HPE-DSI); Scientific Programming with Python

ACHIEVEMENTS & CONFERENCES

- Received Student Presentation Award at **Seismological Society of America** Annual Meeting 2023 for oral presentation, held at San Juan, Puerto Rico in **April 2023**
- Recipient of **Society of Exploration Geophysicists (SEG)** Scholarships for three consecutive academic years **2021-2024**
- Awarded EAS Academic Excellence Scholarship of US \$1,500 for Outstanding Academic Achievement in **2021 & 2023**
- Presented research at **AGU Fall Meeting 2021, 2022** and **SSA Annual Meeting, 2022, 2023**
- Received scholarship of US \$5,000 during undergraduation by the Department of Science & Technology, India in **2016**
- Among the top **2%** out of about 500,000 students in the Indian Institute of Technology - Joint Entrance Examination, **2012**

POSITIONS OF RESPONSIBILITY

Secretary, SEG Wavelets (UH Student chapter, SEG)

Aug 2021 - May 2022

- Responsible in communicating and coordinating all the educational and social activities for department students and officers.
Assisted in organizing talks for the department from planning stage to execution stage

Executive Member, Society of Petroleum Geophysicists, India

Aug 2014 - May 2016

- Instrumental in contributing major sponsorship amounts for Prithvi, Earth Science Symposium, 2015 held in Kharagpur

EXTRACURRICULAR ACHIEVEMENTS

- Secured **2nd position** in CBSE Inter School Sports & Games Competition 2007-08 held in Kottayam, Kerala; Qualified for **CBSE National Level Badminton Tournament**.
- Secured **1st position** in Badminton and **3rd position** in Basketball in The Inter-Hall General Championship (GC), 2013 held at IIT Kharagpur