SHREYAS KALVANKAR

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EXPERIENCE

Software Developer
Dalton Maag

📅 November 2021 - Present   📍 London, United Kingdom

- Assisted in developing a Python system that used Genetic Algorithms for automatically generating thousands of CJK font glyphs, drastically cutting down production time.
- **Pricebot**: Pricebot simplified typeface pricing by considering factors like the number of weights, axes, and scripts. It aimed to ensure accurate and consistent pricing while relieving designers of the time-consuming and error-prone task of manual quoting, thus preventing project overruns and unexpected costs.
- It's a web app with a Ruby on Rails back-end and a VueJS & Typescript front-end. I developed and fine-tuned the pricing models in Typescript based on expected outputs.
- My colleague and I enhanced glyph data models for Arabic, Greek, Cyrillic scripts, accurately representing their letters. I also created a new model from scratch for Devanagari, ensuring precise pricing for non-Latin projects.
- Using graph theory, I devised a process to efficiently create project plans that accurately depict timelines, drastically reducing planning time.

Machine Learning Research Scientist (Consulting)
Relfor Labs Pvt. Ltd.

📅 September 2022 - Present   📍 Pune, India

- Set up the ML training pipeline using PyTorch lightning on Nvidia DGX A100, with automatic hyperparameter tuning using Optuna and dynamic architecture updates, expediting experimentation, making it ∼**10%** faster, which boosted performance metrics.

Machine Learning Engineer
Relfor Labs Pvt. Ltd.

📅 August 2021 - November 2021   📍 Pune, India

- Worked on audio data classification and designed multiple novel deep convolutional neural network architectures in PyTorch, which beat state-of-the-art models with **98.6%** accuracy and ∼**0.98** F1-score
- Leveraged metric analysis techniques in SKLearn and PyTorch to determine optimum threshold values, achieving a precision of ∼**98%** while maintaining high accuracy >**98%**.

Software Development Intern
FinIQ Consulting India Pvt. Ltd.

📅 May 2020 - June 2020   📍 Nashik, India

- Set up an online platform for Forex trading using AngularJS as a new feature for the customers
- Created a python module for stress testing CPU and memory with variable load for integration in the company cloud platforms' testing pipeline

TECHNICAL SKILLS

- **Computer Languages** : C, C++, Python,
- **Web Development** : VueJS, Javascript, Typescript, HTML, CSS, Ruby on Rails
- **ML Frameworks** : Keras, Tensorflow, PyTorch, Sci-Kit Learn

EDUCATION

B.E (Computer Engineering)
K.K. Wagh Institute of Engineering Education and Research

📅 2017-2021   📍 Nashik

- CGPA: 9.7/10 (Rank 1)

PERSONAL PROJECTS & RESEARCH

THE GALAXY ZOO PROJECT

- Developed a CNN in Tensorflow for vote fraction predictions of 37 galaxy features from the Galaxy Zoo decision tree with an rmse score of **0.07765**, ranking us in the **top 3** on the public leaderboard
- Also developed a CNN for classification of galaxies into 7 classes based on their morphologies with an accuracy of **93.7%** and an F1 score of **0.8857**

THE EINSTEINPY PROJECT

- An open source community python package for general relativity
- **Contributions**:
  - Added Reissner–Nordström metric: a static solution to the Einstein-Maxwell field equations, into the code
  - Corrections in the Kerr-Newman and Kerr metrics classes
  - Added calculations of event horizon and ergosphere for a Kerr-Newman blackhole
- DOI: 10.5281/zenodo.4445219

PUBLICATIONS

📄 Journal Articles

- Kalvankar, Shreyas, Hrushikesh Pandit, Pranav Parwate, et al. (2022). *Astronomical Image Colorization and Up-scaling with Conditional Generative Adversarial Networks*.
- Bapat, Shreyas et al. (2020). *EinsteinPy: A Community Python Package for General Relativity*. arXiv: 2005.11288 [gr-qc].
- Kalvankar, Shreyas, Hrushikesh Pandit, and Pranav Parwate (2020). *Galaxy Morphology Classification using EfficientNet Architectures*. arXiv: 2008.13611 [cs.CV].