Nikhil Prabhu

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Education

- **University of Colorado, Boulder** — Boulder, Colorado
  Master of Science in Computer Science; GPA: 3.89/4.0 — *Aug. 2019 – May 2021*
- **Courses**: Object Oriented Analysis and Design, Natural Language Processing, Morphology and Syntax, Algorithmic Game Theory, Convex Optimization, Datacenter Scale Computing
- **PES University** — Bangalore, India
  Bachelor of Technology in Computer Science and Engineering; GPA: 9.19/10.0 — *Aug. 2014 – May 2018*
- **Courses**: Data Structures, Linear Algebra, Statistics, Algorithms, Database Management Systems, Computer Networks, Web Technologies, Machine Learning, Discrete Mathematics and Logic, Natural Language Processing, Theory of Computation

Skills

- **Languages**: Python (Proficient), Java (Experienced), Go (Prior Experience), C (Prior Experience), C++ (Prior Experience)
- **Technologies**: PyTorch, Keras, Flask, Django, Prometheus, Airflow, Jenkins, Docker, PostgreSQL, Hadoop, PySpark, Kubernetes, RabbitMQ, Redis, DynamoDB, AWS (S3, SQS, Lambda), ElasticSearch, Kibana, Nginx

Experience

- **CU Boulder**, Graduate Research Assistant (under Dr. Katharina Kann) — Boulder, Colorado, *Jan 2021 - May 2021*
  - **Low-Resource Machine Translation**: Researching the effects of the addition of morphological information to multilingual pre-trained models, to improve performance on Machine Translation tasks, specifically for low-resource languages.
- **Soroco**, Software Engineer — Bangalore, India, *Jun 2018 - Jul 2019*
  - **Automation Project for large financial services company**:
    - Developed tooling for automation and monitoring of several mission critical processes under single dashboard.
    - Transformed business logic into executable workflows using Splunk, Airflow, Prometheus and Jenkins.
  - **Virtual Assistant for major insurance client**:
    - Developed and maintained several backend services for client needs with the use of REST APIs.
    - Improved algorithms and experimented with ML models associated with intent classification.
    - Closely mentored two interns on project experimenting with CRF Sequence models on data use case.
- **Soroco**, Software Engineer Intern — Bangalore, India, *Jan 2018 - Jun 2018*
  - **Virtual Assistant for major insurance client**:
    - Enhanced NLP intelligence of client-serving Virtual Assistant with disambiguation feature for entity linking.
    - Created a tracking component that vastly improved debugging capabilities.
- **FireEye**, Software Engineer Intern — Bangalore, India, *May 2017 - Jul 2017*
  - **jMQL**: Performed integration with AWS and created testing framework for server log ingestion engine jMQL.

Projects

- **IMDB Analytics API**: Built a developer API to provide CRUD functionality for the IMDB Database using AWS Technologies including DynamoDB, Lambda, S3, SQS, as well as an analytics interface for the same using Elastic Search, Kibana and Nginx.
- **Kubernetes FaceRec API**: Built a REST service on Kubernetes to scan an image for a face and match it with existing images on a Redis database. Deployment of services done using Docker, and communication with worker nodes done through RabbitMQ.
- **ML Music Assistant for Keyboard**: Built Machine Learning Backend for end-to-end keyboard-integrated system that played arpeggios to accompany melody played by a user in real-time, using scikit-learn, Keras, and Python multiprocessing libraries.
- **Collaborative Kuhn Poker**: [Research Project] (Advisor Dr. B. Wagonner) Established the benefit of using tied-regret as a cooperative strategy for improving team-level rewards in multiplayer partial-information extensive-form game Kuhn Poker.

Publications

- **Nikhil Prabhu** and Katharina Kann. (**Best Paper Award**) Making a point: Pointer-generator transformers for disjoint vocabularies. In *Proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing: Student Research Workshop*, pages 85–92, 2020
- **Nikhil Prabhu** and Katharina Kann. Frustratingly easy multilingual grapheme-to-phoneme conversion. In *Proceedings of the 17th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology*, pages 123–127, 2020
- **Nikhil Prabhu** and S Natarajan. Extraction of character personas from novels using Dependency Trees and POS tags. In *Emerging Research in Computing, Information, Communication and Applications*, pages 65–74. Springer, 2019