www.github.com/rajathpatel23
https://rajathpatel23.github.io

RAJAT PATEL

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EMPLOYMENT

Machine Learning Engineer — **Interos Inc., Arlington, VA** — **Jan 2020 - Present**

- Built an Image Search Engine with an active learning component to detect logos of partners and subsidiaries available on company webpages. Implemented a web application using Django, celery and postgres – database with front-end written in bootstrap, jQuery, and JavaScript to build interactive interface for the search engine
- Developed and implemented an entity linking algorithm using transformers (BERT) to enhance the linking capabilities by 30% in the relational knowledge base.
- Developed entity and event extraction models through joint learning using transformer networks to solve knowledge graph completion problem.

Data Scientist Intern — **Interos Inc., Arlington, VA** — **Jun 2019 – Aug 2019**

- Built an intelligent product crawler tool that uses both unsupervised and supervised machine learning to learn the HTML structure of the webpage and identify the product names with 75% accuracy
- Created a pipeline to integrate the product crawler tool with the knowledge base to enhance mapping timelines by 85%.

Graduate Research Assistant (- under Dr. Shiming Yang) — **University of Maryland Baltimore, School of Medicine, Baltimore, MD** — **May 2018 – May 2019**

- Explored deep learning-based techniques to predict the need for massive transfusion with 1st hours and first 24 hours post trauma
- Developed multi-task machine learning algorithms by studying vital signa of trauma patients to predict 7 different outcomes to discover feature level relationship among them.
- Performed research to study idea of combining dimensionality reduction with nearest neighbor approach to represent the decomposed (STFT/CWT) PPG signal for predicting massive transfusion

Software Engineer — **Larsen & Toubro Infotech, Mumbai, India** — **Jan 2015 – Jul 2017**

- Built python libraries for robotic process automation to reduce manual work effort on client projects by 80%.
- Developed shell script to schedule and automate daily monitoring active within client's tech infrastructure to reduce efforts on OS & DB administration.
- Developed a Proof of Concept on distributed SAP data migration technique as a collaborative effort with SAP Center of Excellence team in the IMS business unit.

TECHNICAL SKILLS

Programming Languages:	Python, Go, JavaScript, MATLAB, Shell Scripting, SQL
Frameworks & Technologies:	TensorFlow, PyTorch, NumPy, SciPy, FastAPI, Flask, Django, Sagemaker
Tools & Database:	Jupyter, Git, Visual Studio, PyCharm, Vim, MongoDB, SQLite, MySQL, Kubernetes, Docker

EDUCATION

Baltimore, MD — **University of Maryland Baltimore County** — **Aug 2017 – Dec 2019**

M.S. in Computer Science

Coursework: Design & Analysis of Algorithms, Advanced operating systems, Advanced Computer Architecture, Machine Learning, Natural Language Processing, Information Retrieval, Data Science

Kolhapur, India — **Shivaji University** — **Aug 2010 – May 2014**

B.E. in Electronics and Telecommunication Engineering

Coursework: Data structure and Algorithms, Digital Design, Microcontroller, Image Processing, Embedded Systems

PUBLICATIONS

On the Complementary Nature of Knowledge Graph Embeddings, Fine Grain Entity Types and Language modeling
InProceedings, EMNLP Workshop on Deep Learning Inside Out, November 2020 (link)

PROJECTS

Joint Learning knowledge graph embedding, fine grain entity type and Language models – (Master's thesis)
The deep learning framework model learned real-valued representations for structured facts from a knowledge graph in form of embeddings. The multi-task learning framework helped improved performance on downstream NLP applications

Image-Rel Predictor: Image relationship finder is meta learning algorithm to find relationship of entities detected within the image using representation learning.

PPGNET: Massive Transfusion Predictor for trauma patients: PPGNet is a deep learning model which can assist in automatic feature extraction from first 15 mins of PPG records of trauma patients to detect the need of transfusion within first 24 hrs.