

Devi Prasad Tripathy

Arlington, TX (open to relocation)

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Career Objective: To collaborate with passionate and hard working people to build smart products and provide valuable insights from incoming data streams utilizing cutting-edge Machine Learning techniques

Education

The University of Texas at Arlington

Aug. 2016 - Exp. Jul. 2020

B.S. IN COMPUTER SCIENCE WITH MATH MINOR, GPA = 3.7

- **Notable Coursework:** Data Structures & Algorithms, **Software Engineering**, OS, **Computer Vision**, **Machine Learning**, **AI**, **Human Computer Interaction**, **Statistics**, Computer Networks, Design Patterns
- Received **75% scholarship** of the **entire duration of Bachelors**

Skills

Software Development Tools	C++, Python, Java , GO Rust, Swift, Software design patterns, Data structure and Algorithms, RestAPI, GRPC, Flask, OpenCV, CUDA, HTML, CSS, JS, AWS, GCP, Kubernetes, Istio , Xcode, Android Studio, Gradle, Git, Bash, Gtkmm, pkg-config, autoconf, gmake, GCC, CMake, Apache Ant, Scikit-Learn, Tensorflow, Pytorch, FastAI
Database	NoSql (Redis, RedisGraph, MongoDB, DynamoDB, Firebase), SQL (MySQL)
Deep Learning	CNN (DenseNet, ResNet, Inception), FCN, RNN (GRU, LSTM, bi-LSTM, stacked-LSTM, VAEs, Object Detection, Transformers , Transfer Learning, customizing, debugging and tuning Neural Networks
Machine Learning	Linear Regression, logistic Regression, KNN, Naive Bayes, SVM, RL, Bagging & Boosting (ensemble), PCA, SVD, regularization, accuracy measures, statistical analysis and modeling, and knowledge of end-to-end machine learning pipeline (feature engineering, data cleaning, data visualization, model deployment and serving)

Industry Experience

Software Engineer, Machine Learning

Third Insight Inc.

PROBABILISTIC GRAPH GUIDED ARTIFICIAL REASONING SYSTEM

Aug. 2019 - Present

- Developed a **full-stack system** for **360 degree scene understanding**. Implemented real-time multi **fisheye camera stitching** using **CUDA and C++**, established a **deep learning pipeline** to process the video using **Python** and **C++**
- Implemented **C++ RedisGraph** client to perform **real-time in-memory** graph query. This was used with **GCN for advance visual reasoning**. Explored reasoning potential in knowledge based systems to develop next generation of algorithms for visual scene understanding using the best of deep learning and expert systems. Developed several components of **deep learning pipeline** involved in **automating aircraft inspection**
- Developed modular language model for **on-the-fly adaption** to complex scenarios using **Deep Belief networks**
- Developed novel modularized "build system" using **behavior tree** in **C++** to allow **on-demand module builds** and attaching to the parent, thereby allowing **better memory management and resource allocation**

AI Specialist

Thermo Fisher Scientific

DEEP LEARNING ON QPCR AND PCR TASKS

May 2019 - Aug. 2019

- Developed **next-generation QPCR and PCR analysis software** by utilizing capabilities of **Deep Learning**. **Improved** existing system **accuracy from 78% to 98%**. Solved multi dye cross-talk problems
- Implemented and trained **CNN** models using **Python** and **Tensorflow**. Developed various methodologies to **evaluate the performance** of the model **according to the domain**. Built **front-end** system to use the **Genotyper**
- Developed **front end** using **Java** to **consume deep learning models** for easy interaction with the rest of the software stack
- Created internal tools in **Java** to provide valuable insight into what parameters were considered during prediction

Data Science Engineer

BNSF Railway

COMPUTER VISION ON TRACK AND ENGINE DATA

Aug. 2018 - Jan. 2019

- Developed Computer vision software stack for railway track defect analysis

Co-founder

UrStuffMyHouse

PRODUCT CONCEPTION AND IMPLEMENTATION

May. 2017 - Jan. 2018

- In order to help the community with its need for reliable storage, we built a MVP and launched it to aid people in finding a place to store their belongings safely and conveniently

Undergraduate Research

Scene Description Generation

Submitted to NeurIPS

VISUAL ATTENTION USING TRANSFORMERS

Jan. 2019 - Present

- Innovated visual attention mechanism at visual-feature encoder level. Implemented transformer model to encode and decode image features and generate sentences describing the image

Visual Question Answering

University of Texas at Arlington

PROBABILISTIC HEURISTIC GUIDED DEEP LEARNING

Jan. 2019 - Present

- Implemented situation-aware Visual Question Answering system using Deep Learning powered by Dempster Shafer theory and outperformed current state-of-the-art model MCB-Att. Improved joint-Loss significantly on Wu-Palmer similarity

Latest Projects

RedisGraph C++ Client (Open Source Contribution)

Jan. 2020

WRITTEN IN C++

- Developed C++ client for RedisGraph database that enables caching and advanced graph algorithms like RRT, DStar, Prim, Dijkstra, K-hop to be directly used on the in-memory RedisGraph

Image Transformation Library (Computer Vision)

Jan. 2020

WRITTEN IN CUDA AND C++

- Developed CUDA based library to perform various lens distortion corrections

Preoperative MRI segmentation using UNet (Computer Vision)

Jan. 2019

WRITTEN IN KERAS, TENSORFLOW

- Developed a Deep Learning based image segmentation model (UNET) to detect Glioma. Achieved the dice score of 0.91 by incorporating Squeeze and Excitation architecture used in UNETS

MHealth (Deep Learning)

Winner at UTA Data Hack

WRITTEN IN PYTORCH, REACTJS

Oct. 2018

- Built an cross platform app for Malaria and eye disease detection using ResNet CNN architecture

T-Mobile Rescue (NLP and Deep Learning)

Winner at T-Mobile Hackathon

WRITTEN IN PYTORCH, TENSORFLOW LITE, IOS-SWIFT

Oct. 2018

- Built an prototype application using NLP and Collaborative filtering to help both T-Mobile users and Customer Service representatives

Digital Well Being (Deep Learning)

Winner at HACKTX UTA

WRITTEN IN PYTHON, PYTORCH, TENSORFLOW; DEVELOPED FOR IOS USERS AND ANDROID USERS

Oct. 2018

- Implemented a CNN and a bi-Directional LSTM based system to detect fake news by analyzing vast amounts of news articles and Fake images

Ezera (NLP and Information retrieval)

Top 7 in MLH Southwest regional

WRITTEN USING PYTHON, JS, HTML AND HOSTED IN AWS

Oct. 2016

- A smart-app prototype, created to assist people especially visually challenged community. It can act as a one stop querying station that detects the identity of a person (face detection), the type of object in front (object detection) and describes all inferences orally in English language

Safe Haven (Android App)

TAMU Hack - Winner

WRITTEN IN ANDROID (JAVA)

Oct. 2016

- Developed an Android app to help people in crisis and help in lowering the rate of online harassment
- Winner at Texas A&M Hackathon

Honors and Certifications

2020	Google Foobar Challenge Level 5/5 , Secret challenge by Google Inc. Completed in April 2020	<i>Programming</i>
2018	AWS Certified Developer - Associate , by Amazon Web Services	<i>AWS</i>
2018	Deep Learning 5 course Specialization on Coursera (Certified) , 5 courses specialization by Andrew Ng	<i>Coursera</i>
2018	Fast AI , Deep Learning for coders by Jeremy Howard	<i>fast.ai</i>
2018	HTML, CSS and JavaScript Coursera (Certified) , by Duke University on Coursera	<i>Coursera</i>