Manjulata Garimella

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3919 East Bennington Blvd, Bloomington, IN

Education

Indiana University — Bloomington, IN
Master of Science in Data Science; GPA: 3.93/4.0 — *Expected December 2019*

Relevant Coursework: Advanced Machine Learning, Machine Learning with Signal Processing, Image Processing, Computer Vision, Deep Learning, Learning Theory and Probabilistic Graphical Models, Advanced Database Management Systems, Elements of Artificial Intelligence, Data Mining, Introduction to Statistics, Data Visualization, Applied Algorithms, High Performance Big data systems

Indiana University — Bloomington, IN
Master of Science in Computer Science; GPA: 3.80/4.0 — *December 2009*

Jawaharlal Nehru Technological University — Hyderabad, AP, India
Bachelor of Technology in Electronics and Communication Engineering; GPA: 8.18/10.0 — *Aug 2001 - May 2005*

Skills

- **Languages**: Python, R, C, T-SQL, SQL, Java, C#, C++, PHP, Javascript, CSS, XML, XSLT, Apex, Visualforce, Big Data, ETL
- **Technologies**: Tableau, Alteryx, GCP, AWS, GitHub, Apache Spark, Apache Hadoop, Docker, Microsoft Team Foundation Services (TFS)
- **Libraries**: PyTorch, Scikit-Learn, Numpy, Scipy, Pandas, Jupyter, OpenCV, PIL, ASP.NET framework, .NET framework
- Certified Scrum Developer (Agile Engineering)

Academic Experience

Indiana University — Bloomington, IN
Research Intern — *May 2019 - Present*

- Collaborated with Post-Doctoral associate in building a deep learning model to improve the prediction time of the failure of electronic circuits based on electromigration analysis of CCD and thermal images
- Developing a deep learning classification model using PyTorch for identification of Asian elephants to help with animal conservation efforts (Github Link)
- Creating a dataset of animal action (walking, feeding, staring etc.,) video clips to help train and test object detection and classification models

Indiana University — Bloomington, IN
Teaching Assistant for Graduate Course in Elements of Artificial Intelligence — *August 2018 - December 2018*

Professional Experience

Indiana University Studios (IU Studios) (Github Link) — Bloomington, IN
Part-time Data-Engineer — *May 2019 - Current*

- Developed mechanisms to extract, transform, and load data related to Indiana University from various social media channels (e.g., Twitter, LinkedIn etc.,) into a staging area for analysis using Python APIs and technologies like ETL (Alteryx)
- Implemented a Naive Bayes algorithm for sentiment analysis on the data feed from Twitter to model the impact of tweets from the Indiana University official account
- Delivered social media dashboards using Tableau to the Indiana University Marketing Team (IU Studios) with the goal of providing insights into the social media traffic for IU. Developed reports that are utilized both by designers and decision makers in setting up a successful social media strategy for IU which maximizes brand awareness and positioning
- Developed a comprehensive research report on the qualitative and quantitative data available at Indiana University - Purdue University Indianapolis (IUPUI) for drawing insights on student enrollment and provided recommendations on improvements that could be made to the data collection and data inventory systems to improve predictions of student attractiveness

Pacers Sports and Entertainment (NBA)(Github Link) — Indianapolis, IN
Part-time Data Analyst — *August 2018 - May 2019*

- **WNBA (Indiana Fever basketball) Visualization**: Developed visualizations for the WNBA game survey data to help understand the impact of in-game entertainment, food and beverage services, and other in-game services on ticket sales; analyzed the data to help with identifying potential season ticket purchasers and the promotions that need to be provided for increasing the renewal rate;
- **WNBA Customer Renewal Profile**: Developed a "renewal profile" for the users by performing cluster analysis of the user data coming from various sources likes Salesforce (for demographic data), internal databases (for ticket transaction data), and user survey data. This was to help the Pacers marketing staff in understanding the various segments of users and customizing offerings to individual segments to help improve ticket sales.

Indiana University Bloomington, IN
Snr. Systems Analyst *Jan 2010 - Aug 2018*

- Developed and delivered a number of responsive web applications and websites using state of art web design frameworks like Bootstrap and Zurb to multiple clients across Indiana University such as Kelley School of Business, Marketing-lockup, IU Health Center (Online Scheduler) etc.,
- Developed applications using a wide variety of tools and technologies like Salesforce in Apex, Visual force code, ASP. NET, PHP etc.,
- Worked with clients to understand their needs and translate them into requirements for the various applications

Biomedical Applications, Research Technologies University Bloomington, IN
Gerald L. Bepko Student Intern *May 2009 - Aug 2009*

- **Java J2EE Application**: Worked on National Gene Vector Laboratories website https://www.ngvbcc.org/Home.action a Java J2EE based web application by providing enhancements and maintenance for the application

Computer Science department, Indiana University Bloomington, IN
Research Assistant *Jan 2009 - August 2009*

BroadComm Inc. Hyderabad, India
Software Engineer *May 2005 - Jan 2007*

- **Guest VLAN and Voice VLAN**: Developed C code for new features Guest VLAN and Voice VLAN targeted for various production level Fastpath Software releases
- **Developers Manual**: Prepared Functional Specification, High Level Design Document, Unit Testing document and Integration Test plan for the new software features Guest VLAN and Voice VLAN

Data Science Projects

- **Learning Disentangled Latent Spaces using Variational Autoencoder (Github Link)**: A probabilistic graphical model for disentangling latent spaces in images
  - Studied and implemented various models using variational autoencoder (VAE) like basic VAE, β-VAE, VAE+GAN, Adversarial symmetric VAE using MNIST dataset to understand the role of VAE in disentangling latent spaces in the image and analyzed the performance of the learnt latent code in image classification tasks
- **Variational Bayesian Approach to Movie Rating Prediction (Github Link)**:
  - Implemented Variational EM algorithm proposed in the literature: (VAE EM Limits) using probabilistic matrix factorization to perform movie rating prediction and computed RMSE values using various datasets and rank values
- **Contributions to Open Source Software (Dipy) (Github Link)**:
  - Contributed to Dipy open source software by implementing SSD (sum of square differences metric) for affine registration of 3D MRI images.
- **Deep learning models for Computer Vision tasks**:
  - Used Pytorch framework to build Resnet image classification model and analyzed accuracy of the model in semi-supervised setting using synthetic data
  - Studied and implemented deep learning models for image-to-image translation tasks like Multimodal Unsupervised Imageto-Image translation (MUNIT), Unsupervised Image-to-Image translation (UNIT) on amazon and office datasets
  - Studied and implemented various GAN models like BicyleGAN, CycleGAN etc. using amazon and office datasets to perform data augmentation using GANs network
- **Deep learning for Audio Processing (Github Link)**:
  - Implemented deep learning models such as Siamese network to perform speaker verification task
  - Implemented RNN model using LSTM for Speech denoising
  - **Privacy Preserving for Audio Synthesis** - Studied and implemented GAN and CycleGAN (generative adversarial network) models in order to perform audio synthesis on the input audio signal data
- **Animal Care and Control of Adopted Animals - Bloomington Animal Shelter**:
  - Developed visualizations using the Bloomington animal shelter data in order to draw insights on the outcomes of the animals based on the intake reasons, and incoming months

Additional Experience & Achievements

- Winner of Grace Hopper Scholarship for GHC#19
- Winner of state merit scholarship from Govt. of Andhra Pradesh, India.
- Awarded certificate of merit at the end of senior year of undergraduate education for standing second in the school.