Pratik Mangalore

https://pratmangalore.github.io/

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EDUCATION

- **University Of California, Los Angeles** — Los Angeles, CA
  Master of Science in Computer Science; GPA: (4.0/4.0) — *March 2020 (Expected)*

- **Indian Institute Of Information Technology, Allahabad** — Allahabad, India
  Bachelor of Technology in Information Technology; GPA: (9.31/10.0) — *July. 2014 – July. 2018*

EXPERIENCE

- **Cisco** — Bangalore, India
  Software Engineering Intern - Mobility Core Business Unit — *Jan. 2018 - June. 2018*
  - **Application Detection & Control**:
    - Instrumental in developing a heuristic machine learning algorithm to classify network traffic based on TCP payload data
    - Integrated the above model with the Core ADC module
    - Collected and analyzed payload data to detect anomalies
    - Optimized memory usage for branches related to Machine Learning within the ADC module
  - **StarOS**:
    - Developed an independent module which can auto-document the logic for an application's protocol detection code using regular expressions and the NLTK library

RESEARCH & PROJECTS

- **Developed a Probabilistic Database enhanced with Open World Semantics** :
  - Implemented the Lifted Inference Algorithm to check whether a query has a possible probabilistic solution, and if it does, then return the result.
  - Enhanced the normal Lifted Inference Algorithm with open world semantics, hence allowing one to query items not strictly present within the probabilistic databases fed as input to the algorithm.
- **Using Complex Network Measures to compute functional and causal connectivity in the brain**:
  - Mapped brain activity caused in response to verbal and mathematical tasks to a connectome
  - Applied Complex Network measures to differentiate the activity caused in response to verbal and mathematical tasks
- **Dynamic Screen Clipper - (Self Project)**:
  - Developed this application for the Windows platform, that can crop selected regions from an application and sticky it onto the screen. National Award Winner in Hack In The North '17 (India's largest student organized Hackathon
  - The stickied window retains full funnctionality of the application.)
- **Augmenting Statistical Machine Translation**:
  - Used the NLTK library in Python and developed a Modified Apriori Algorithm to obtain semantic rules based on POS (Parts-Of-Speech) Tagging. The POS tagging aids in performing machine translation when sarcasm is detected.
- **Developed a language invariant OCR**:
  - Classified by converting input into a set of strokes which were learned using unsupervised machine learning
- **Developed an Emotion & Expression Detection engine using Gabor Filters**:
  - Performed face and emotion recognition using Gabor filters and facial features.

PROGRAMMING SKILLS

- **Languages**: Python, C++, C, Java, C#,HTML,CSS   **Tools:** MATLAB, Microsoft Visual Studio, NetBeans, Git
- **Data Science and ML Libraries**: NumPy, Scikit-Learn, Tensorflow, Keras
- **Relevant Coursework**: Data Structures & Algorithms, Probabilistic Programming and Relational Learning, Artificial Intelligence, Natural Language Processing, Operating Systems, Machine Learning, ML in Bioinformatics, Simulation & Modeling, Compiler Design, Computer Architecture

HONORS, AWARDS & MEMBERSHIP

- **Received the IEEE Computer Society Richard E. Merwin Scholarship '17**:
  - For maintaining an excellent academic profile and providing dedicated volunteering services to the IEEE Computer Society
- **Speaker - Technical Awareness Program, IEM Kolkata '17**:
  - Spoke on current research topics in Data Science and Machine Learning