Saksham Bassi

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Research interests

My primary research interests are in applying deep learning in imaging applications and time-series analysis.

Education

- **Pune Institute of Computer Technology, University of Pune** — Pune, India
  Bachelor of Engineering in Information Technology; GPA: 8.67/10.0 — *July 2015 – June 2019*
  - **Relevant courses**: Machine learning, Data science, Soft computing, Operations research, Natural language processing, Social media analytics, Stochastic processes, Discrete structures, Optimization, Software engineering

Publications

- **Saksham Bassi**, Atharva Gomekar, A. S. Vasudeva Murthy. **A learning algorithm for time-series based on statistical features**. *International Journal of Advances in Engineering Sciences and Applied Mathematics*. [link]
- **Saksham Bassi**, Atharva Gomekar. **Deep Learning Diagnosis of Skin Lesions**. In *International Conference on Computing, Communication and Networking Technologies, 2019.*

Experience

- **HSBC** — Pune, India
  Software Engineer — *July 2019 - Present*
  - **Monitoring-as-a-Service**: Building a tool to monitor logs in applications across and provide alerts as predictive analytics
  - **Hackathon**: Built banking application for the visually impaired using Speech to text libraries and gestures, we were awarded the Adobe Partner Award for our innovation
- **Tata Institute of Fundamental Research** — Bangalore, India
  Research Intern - Advisor: Prof. A. S. Vasudeva Murthy — *Jan 2019 - June 2019*
  - **Time-series modeling**: Modeling and factorization of time-series using statistical features in application areas like astronomy, finance, mathematical time-series, currency exchange rates, commodity prices [paper; *published in International Journal of Advances in Engineering Sciences and Applied Mathematics*]
  - **Structural pattern analysis**: Analyzing the structural patterns in time-series of Onion retail prices using mathematical techniques like Hurst exponent, change point detection and cosinor function fit, to conclude about the seasonality and effects caused by external factors in commodities [preprint; *in submission*]
  - **Computer Vision**: Worked on Precision Agriculture in identifying diseases in farm fields using computer vision techniques on drone images with Dr. Kota Harinarayana and Dr. Vidyadhar Mudkavi [report]
- **Inter-University Center for Astronomy and Astrophysics** — Pune, India
  Research Intern - Advisor: Dr. Kaushal Sharma — *Feb 2018 - Dec 2018*
  - **Deep Learning**: Classification using 1D and 2D neural networks to predict variable star classes in sky surveys; CNN on brightness magnitude and time mappings, CNN-LSTM for pattern recognition in time-series [paper; *in submission*]
- **Asquared IoT** — Pune, India
  Research Intern - Mentor: Dr. Anand Deshpande — *Aug 2018 - May 2019*
  - **Research**: Autoencoder and CNN on the sound sensors data to qualitatively assess industrial processes; explored spectral subtraction, filtering techniques for noise elimination
- **Promethean Energy** — Mumbai, India
  Software Engineering Intern — *Nov 2017 - Jan 2018*
  - **Analytics**: Flask dashboard to analyze anomalies' patterns on time-series sensor data
  - **Optimization**: Reduced MongoDB query time by 90%, improved MEAN web-app load time by 50%
- **Redesyn** — Mumbai, India
  Software Engineering Intern — *May 2017 - June 2017*
  - **Development**: Creation of Ruby mailer methods and activity logs to serve thousands of customers

Projects

- **Data Pipeline & Task Management**: Developed web-app based on Flask and MySQL as database for handling company's daily tasks like employee task assigning with dynamic Kanban, managing clients and providing various employees' functions. [source]
- **MusicLSTM**: Long short-term memory models using Keras trained on various song inputs to generate similar new songs.
- **Brand hype - Sentiment Analysis**: Presents hype percentage of mobile brands based on the polarity of tweets (using Tweepy) on respective brands which helps in driving marketing decisions. [source]
- **Unsupervised segmentation**: Deep learning model to automatically assign labels to pixels by learning to identify objects in images and segmenting them with different colours.

Presentations & Events

- **HSBC Global Graduate Induction, *London***, *August 2019*: Interactions with fellow graduates and spoke about my undergrad research experience.
- **International Conference on Computing, Communication and Networking Technologies, *IIT Kanpur***, *July 2019*: Presented research work of Deep Learning Diagnosis of Skin Lesions.
- **International Centre for Theoretical Sciences, *Bangalore***, *May 2019*: Presentation on research work on time-series modeling using statistical features.
- **Tata Institute of Fundamental Research, *Bangalore***, *May 2019*: Presentation on research study and computer vision algorithms for Precision Agriculture.

Skills

- Python, C++, Ruby, Java, JavaScript, NodeJS, Angular, LaTeX, Spring, Keras