Sampanna Kahu

Contact Information

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Professional Experience

Software Development Engineer II September 2020 - present
Amazon Fulfillment Technologies, Amazon.com, Inc. *Seattle, WA, USA*

- I develop software systems for the inbound operations for Amazon's warehouses worldwide. My team is responsible for automating the process of receiving the inventory from vendors and sellers at Amazon's warehouses. Through this process, cartons are auto-received without manual intervention through a series of predictions and validations by applying Computer Vision techniques on the carton-images captured through Parcel Identifier tunnel devices.

Software Development Intern June 2019 - August 2019
Walmart Labs *Reston, VA, USA*

- Built a tool to move Big Data from on-premise Hadoop cluster to Google Cloud Storage using Apache Spark and ZooKeeper.

Software Development Engineer I July 2015 - July 2018
Flipkart.com *Bangalore, India*

- Built web-scale services for e-commerce review images using Spring Framework, Jetty, Couchbase, Redis and MySQL.
- Built the functionality of storing, moderating and serving product review images at web-scale using Spring Framework, Jetty, Couchbase, and internal Content Delivery Network.)
- Developed a centralized moderation service to act as the interface between Flipkart's systems and external moderator's systems. Used tools like the Dropwizard Framework, Hibernate ORM, and MySQL. Helped make the service secure my following security best practices when writing code.

Software Development Intern July 2014 - December 2014
Flipkart.com *Bangalore, India*

- Developed a Microsoft Kinect-based Windows C# application for converting any physical surface into a touch-sensitive surface. This applications enables users to interact with physical medium using various gestures. Microsoft's .Net Framework 4.5, Kinect SDK, and the C# programming language were used in this project.

Software Development Intern May 2013 - July 2013
GlobalLogic India Pvt. Ltd. *Nagpur, India*

- Developed a Microsoft Kinect-based Windows C# application for converting any physical surface into a touch-sensitive surface. This applications enables users to interact with physical medium using various gestures. Microsoft's .Net Framework 4.5, Kinect SDK, and the C# programming language were used in this project.

Education

Virginia Tech August 2018 - August 2020
M.S. in Computer Engineering

- GPA: 3.91
- Important courses: Deep Learning, Advanced Machine Learning, Computer Vision, Big Data Text Summarization, Digital Libraries, and Linux Kernel Programming.
- Thesis advisor: Dr. Edward A. Fox.

Birla Institute of Technology and Science, Pilani August 2011 - May 2015
B.E. (Hons.) in Electrical and Electronics Engineering

- GPA: 7.97
- Important courses: Digital Image Processing, Data Mining, C Programming, and Engineering Maths.
- Undergraduate research advisor: Dr. K. M. M. Rao.

Research Interests

Information retrieval, extraction, scholarly big data, applied machine learning and deep learning, natural language processing, computer vision

Publications and Project Reports

Peer-reviewed publications

- **Sampanna Yashwant Kahu**, William A. Ingram, Edward A. Fox, Jian Wu. "ScanBank: A Benchmark Dataset for Figure Extraction from Scanned Electronic Theses and Dissertations" In: *Proceedings of 2021 Joint Conference on Digital Libraries* **(JCDL 2021)**, September 27 – October 1, 2021. Virtual Event.
- Disha Sardana, **Sampanna Yashwant Kahu**, Denis Gračanin, Krešimir Matković. "Multi-modal Data Exploration in a Mixed Reality Environment Using Coordinated Multiple Views." In: *International Conference on Human-Computer Interaction* **(HCI International 2021)**, July 24 - 29, 2021. Virtual Event.

M.S. Thesis

- Title: Extracting Figures and Tables from Scanned Electronic Theses and Dissertations (ETDs)
- Contribution: Self-supervised learning for extracting figures and tables from scanned ETDs. Also built a benchmark dataset with bounding box labels for over 10K pages of scanned ETDs.
- Thesis link: http://hdl.handle.net/10919/100113

Project Reports

- Aromando, John, Bipasha Banerjee, William A. Ingram, Palakh Jude, **Sampanna Kahu**. "Classification and extraction of information from ETD documents." CS6604 Digital Libraries (2020). https://hdl.handle.net/10919/96645.
- **Sampanna Kahu**. "Deep Task Scheduler: Predicting Next Scheduled Task Using Machine Learning." In: *ECE5984 Advanced Linux Kernal Programming* (2019).
- **Sampanna Kahu**, Prathamesh Mandke. "Few-shot Deep Knowledge Distillation using Monte-Carlo Dropout: An Ablation Study." In: *CS6524 Deep Learning* (2019).
- **Sampanna Kahu**, Disha Sardana. "Exploring Heterogeneous Datasets using Hololens in Mixed Reality." In: *CS5754 Virtual Environments* (2019).
- Ahuja, Naman, Ritesh Bansal, William A. Ingram, Palakh Jude, **Sampanna Kahu**, Xinyue Wang. "Big Data Text Summarization: Using Deep Learning to Summarize Theses and Dissertations." ECE5984 Big Data Text Summarization (2018). http://hdl.handle.net/10919/86406.

Mentoring

Saket Mundhada: Mentored Saket Mundhada, an undergraduate student at Virginia Tech in the Digital Libraries Research Laboratory for his undergraduate research project.
Interns at Flipkart: Mentored two interns at Flipkart for their internship project in 2017. The project aimed at using Deep Learning for product review aspect mining.
Student Mentorship Program, BITS Pilani: Mentored four undergraduate students in Robotics as part of the Student Mentorship Program organized at BITS Pilani in 2015.

Teaching Experience

Electrical and Computer Engineering, Virginia Tech

- ECE3574 Applied Software Design (TA for Dr. Chris Wyatt) - Fall 2018
- ECE3574 Applied Software Design (TA for Dr. Changwoo Min) - Spring 2019
- ECE3574 Applied Software Design (TA for Dr. A Lynn Abbott) - Fall 2019
- ECE2574 Data Structures and Algorithms (TA for Dr. Chris Wyatt) - Spring 2020

Awards and Competitions

1st position in Maze Solver Robot Competition at BITS Hyderabad Technical festival (ATMOS 2012).
4th Position in Maze Solver Robot Competition at BITS Goa Technical festival (QUARK 2013).
3rd position in the International Robotics Challenge GridMasters Competition at IIT Mumbai 2013.
1st position in Machinist (Real-time video processing and robotics competition) BITS Hyderabad Technical Festival (ATMOS 2013).

Extra-Curricular Activities

Founding member of Automation and Robotics Club (ARC) at BITS Hyderabad
State-level college volleyball player
Music: Passed four national-level exams of Tabla at Akhil Bhartiya Gandharva Mahavidyalaya
Member of Music Club (ensemble) at BITS Hyderabad

Technical Skills

Languages: Java, Python, C/C++, C#, JavaScript, TypeScript
Frameworks: Spring Framework, Bootstrap, DropWizard, TensorFlow, PyTorch
Developer Tools: Git/Github, Linux (Ubuntu), IntelliJ Idea
Libraries: MySQL, Redis, CouchBase, Kafka, ZooKeeper, Spark