Shubham Pateria

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EDUCATION

National Institute of Technology, Durgapur, WB, India
Bachelor of Technology, Electronics and Communication Engineering, May 2013
GPA: 8.66/10

PROJECTS

Multiple Mixer Based Iterative Composition for Power Reduction in Display Processing Pipeline: Worked on developing a new process architecture for display frame composition using display processor equipped with multiple pipes and mixer. Frame composition is performed in iterations over multiple mixers to handle higher display load (number of frames) and reduce dependency on GPU.
Guide: Krishna Kishore Jha, Chief Engineer, Samsung R&D, Bangalore
$http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber = 7411205$

Aspect Based Sentiment Analysis in SemEval-2016 (independent activity): Participated in the SemEval - 2016 Workshop. For this participation, we developed a supervised classification model to predict aspect-specific sentiment polarity within a consumer review. The model used weighted SVM classifier trained over following features: target n-grams, lexicon scores, negation terms, neutral terms, aspect category specific keywords and precedent-polarity sequence. The model was developed using Python with NLTK 3.0, scikit-learn packages and external lexicon resources (MPQA Subjectivity).
The paper describing the system is under review by NAACL SemEval committee.

Power Efficient, Bandwidth Optimized and Fault Tolerant Sensor Management for IOT in Smart Home: We worked on an extension of data correlation and prediction models used for spatio-temporal pattern analysis in IoT or sensor networks and applied these for analyzing relation between various atmospheric factors like temperature, humidity, precipitation etc.
$http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber = 7154732$

Studies on Power Control in Cognitive Radio Systems Using Spectrum-sensing Side Information (Undergraduate Project): Transmission power for a Cognitive Radio (CR) can be obtained as a function of path-loss (η). In our study, average Signal-to-Noise Ratio (SNR) (γ) sensed over a given time and bandwidth (TW) window was taken with a predetermined energy threshold (λ) to estimate a probability of detection (Pd) as function of (γ, λ, T, W). Assuming a deterministic channel fading, the path-loss (η) could then be modeled against the Pd values. Transmission power curve is then obtained from (η)-Pd relation.
Guide: Dr. Sumit Kundu, Dept. of ECE, National Institute of Technology, Durgapur
Period: Oct, 2012 to March, 2013

Localization in a 3-D Map Using Reverse Projection of Sensor Data: An RGBD sensor equipped robot was used for depth estimation by ray-tracing along 8 directions (at 45-degree angles) per plane (x,y,z). Each ray was transformed into vector with depth and angle - v(d,θ). Then, in a simulated map, boundary cells were first sampled by density. Sampled cells were used as virtual transmitter for sensor rays along 24 vectors obtained. The degree/intensity of superposition of reverse-projected vectors was used for approximate localization. The method was developed using Microsoft Kinect RGBD camera and TurtleBot using ROS.
Guide: Dr. K. Madhav Krishna, Robotics Research Center, International Institute of Information Technology, Hyderabad
Period: May, 2012 to July, 2012

SKILLS

Languages: C, C++, Python, C#, Java, Bash.
Web Development: HTML, CSS (elementary)
Applications: MATLAB, Octave, Vi/Vim, Eclipse, Visual Studio.
Operating Systems: Windows, Linux, Android, ROS (elementary)

EXPERIENCE

Trainee - Technology — Sapient Global Markets
Oct 2013 - Feb 2014 — Bangalore
Underwent training, during employment, in C# and Microsoft .Net technologies with Mock Project to design a virtual trading platform for handling commodities-trading portfolios.

Senior Software Engineer — Samsung R&D
June 2014 - present — Bangalore
Kernel development and driver development for KGSL (GPU driver) and MDP (Display driver). Bootloader development for MDP Development for Android graphics framework (pipeline, event synchronization, hardware abstraction etc.) Research focused on mobile computing, processing architecture, image processing in graphics/display pipeline.

Research Intern — IIIT, Hyderabad
May 2012 - July 2012 — Hyderabad
My responsibilities included collection of Kinect sensor data with TurtleBot and mapping using Octomap, developing simulation model for robot localization in 3-D map using ROS packages and studying the validity of reverse-projection method.

Trainee — IIIT, Pune
May 2011 - July 2011 — Pune
Training program on Embedded Systems in Robotics

INTERESTS

Machine Learning, Computer Vision, Kernel architecture and driver development, C Programming

RELEVANT COURSES

Machine Learning, Andrew Ng, Coursera
Probabilistic Graphical Models, Daphne Koller, Coursera
Algorithms: Design and Analysis, Tim Roughgarden, Coursera
Practical Machine Learning, Jeff Leek, Coursera
Statistical Inference, Brian Caffo, Coursera
Introduction to Computational Thinking and Data Science, MITx: 6.00.2x, John V. Guttag, edX