

Shreyan Chowdhury

CONTACT INFORMATION	Honeywell Technology Solutions Lab, Bengaluru, Karnataka – 560103 India			shreyan.chowdhury@honeywell.com shreyan0311@gmail.com +91 9198264494
RESEARCH INTERESTS	I am interested in creating technologies to extract information from and discover patterns in music, in order to better understand the pervasive nature of music across cultures. I am also interested in deriving insights from audio-visual data through analytics, computer vision, and image processing.			
EDUCATION	B.Tech-M.Tech	Electrical Engineering, Indian Institute of Technology (IIT), Kanpur, India	8.0/10.0 (M.Tech) 6.6/10.0 (B.Tech)	2015
	CBSE XII	Delhi Public School Ghaziabad, Vasundhara	92.6%	2010
	CBSE X	Delhi Public School Ghaziabad, Vasundhara	93.8%	2008
EMPLOYMENT	Honeywell Technology Solutions Lab, Product Design Engineer Developing connected systems for smart buildings and smart homes. Currently working on detection and prediction of faults in heavy machinery using audio (“Aural Intelligence”).			Jul 2015 – Present
	ST Microelectronics, Engineering Intern Developed low-cost power line communication for smart street lighting in cities.			May – Jul 2013
PUBLICATION	Interspeech 2017, Stockholm, Sweden – Conference Proceedings Chowdhury, S., Guha, T., Hegde, R.M. (2017) Music Tempo Estimation Using Sub-Band Synchrony. Proc. Interspeech 2017, 3093-3096 http://dx.doi.org/10.21437/Interspeech.2017-1000			Aug 2017
RESEARCH	Analysis of Emotional Content of Ragas in Hindustani Classical Music Independent Project Collaborator: Prof. Tanaya Guha (Dept. of EE, IIT-Kanpur). <ul style="list-style-type: none">• A study to investigate the differences in emotional content of the <i>Ragas</i>.• Exploring correlation of emotional content to a <i>Raga</i>’s stipulated phase of day.			Sep 2017 – Present
	Musical Tempo Estimation using Sub-band Synchrony M.Tech Thesis Supervisor: Prof. R. Hegde (Dept. of EE, IIT-Kanpur). <ul style="list-style-type: none">• Studied the applications of rhythmic information retrieval from music.• Proposed a novel signal processing method for tempo estimation.			2014 – 2015
INDUSTRIAL PROJECTS	Aural Intelligence, Honeywell Technology Solutions Lab Built and deployed a system for detection and prediction of faults in heavy machinery using audio, with crowdsourced model training. Implemented edge-level feature extraction, and cloud-based unsupervised anomaly detection and supervised fault classification algorithms.			Feb 2017 – Present
	Image Signalling, Honeywell Technology Solutions Lab Developed a data transmission method between device with segmented display and smartphone with camera. Data was decoded from captured video stream using video and image processing.			Jun – Jul 2017
	Fuzzy Control, Honeywell Technology Solutions Lab Developed tool for simulation and testing of adaptive fuzzy control systems, thereby reducing test cycle time by up to 50%. Delivered talk on adaptive fuzzy control as a part of domain training.			Nov 2015 – Mar 2016
	Power Line Communication for Smart Street Lighting, ST Microelectronics Designed low-cost power line communication for smart street lighting by optimizing computation complexity for FSK demodulation. Demonstrated communication over 50Hz power line.			May – Jul 2013

ACADEMIC PROJECTS	Facial Keypoints Detection Feb – Apr 2015 Course project for <i>Introduction to Machine Learning</i> . Explored different detection approaches and obtained minimum RMSE using ConvNet.
	Global Motion Estimation in Video Sequences Mar – Apr 2014 Course project for <i>Digital Video Signal Processing</i> . Enhanced 8-parameter motion model using hierarchical gradient descent.
	Restoration of Defocus and Motion Blurred Images Oct – Nov 2013 Course project for <i>Statistical Signal Processing</i> . Improved restoration of images by using MAP to increase point spread function estimation accuracy.
	Active Noise Control May – Jun 2012 Summer project. Supervisor: Prof. N. Tiwari (Dept. of ME, IIT-Kanpur). Simulated adaptive control systems for noise reduction in duct-like spaces.
AWARDS AND ACHIEVEMENTS	Recognized for technical excellence by Honeywell Technology Solutions Lab: <ul style="list-style-type: none"> Received Bravo Award for implementing remote diagnostics using Image Signalling. Jul 2017 Received Star Award for support in test automation. Apr 2017 Received Bronze Award for driving key new product introduction to market. Dec 2016 Received Kaizen of the Month Award for driving continuous improvement. Nov 2015
	Received Green Belt in Design for Six Sigma (DFSS) for applying DFSS principles to execute and drive technology projects. Feb 2016
	Achieved 99.87 percentile in Indian Institute of Technology – Joint Entrance Exam (All India Rank of 637 out of about 485,000 candidates). Apr 2010
RELEVANT COURSES	Speech Signal Processing Statistical Signal Processing Image Processing Digital Video Processing Fundamentals of Machine Learning Digital Sound Design (Coursera certificate).
TECHNICAL SKILLS	Programming Languages (and relevant modules) <ul style="list-style-type: none"> Python (LibROSA, Scikit-Learn, Pandas) MATLAB (MIRToolbox) C/C++ R ChuckK Software <ul style="list-style-type: none"> FL Studio (Digital Audio Workstation) Sonic Visualizer R Studio Microsoft Azure ML Studio IAR Embedded Workbench Atlassian JIRA, Bamboo, Klocwork Git Tortoise SVN
TEACHING	Teaching Assistant 2014 – 2015 Electrical Engineering Lab-I and Electrical Engineering Lab-II for 3 rd year undergraduate students.
EXTRA-CURRICULAR ACTIVITIES	Music Club, IIT-Kanpur 2010 – 2015 <ul style="list-style-type: none"> Organized and performed in the bi-annual <i>Musical Extravaganza</i>, a celebration of cross-cultural and cross-genre music, for 5 consecutive years. Represented college in various inter-collegiate music competitions, and won accolades in Western Acoustic and Western Band competitions. Taught guitar at <i>Guitar Workshop</i> organized by the Music Club.
	Electronics Club, IIT-Kanpur 2010 – 2012 <ul style="list-style-type: none"> Represented college in various inter-collegiate electronics competitions.
LANGUAGES	English Hindi Bengali French