BHANU TEJA GULLAPALLI

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EDUCATION

University of Massachusetts, Amherst — Sept '18 - Present
PhD in Computer Science (advised by *Prof. Tauhidur Rahman*) — CGPA-3.95/4.0

University of Massachusetts, Amherst — Feb '17 - Sept '18
MS in Computer Science — CGPA-4.0/4.0

Indian Institute of Technology, Guwahati — July '11 - May '15
Bachelor of Technology in Computer Science — CGPA-7.81/10.0

RESEARCH INTERESTS

- Wearable Health Sensing
- Machine Learning
- Mobile Health Systems

PAPERS

- OpiTrack: A Wearable-based Clinical Opioid Use Tracker with Temporal Convolutional Attention Networks
  Gullapalli, B.T., *Stephanie, C., Brittany, P.C., Ganesan, D. and Rahman, T*
  UBICOMP 2021

- Joint prediction of cocaine craving and euphoria using structured prediction energy networks
  Gullapalli, B.T., *A., Angarita, R.T., Ganesan, D. and Rahman, T*
  MOBISYS 2021 WORKSHOP

- On-body Sensing of Cocaine Craving, Euphoria and Drug-Seeking Behavior Using Cardiac and Respiratory Signals
  Gullapalli, B.T., *Natarajan, A., Angarita, G.A., Malison, R.T., Ganesan, D. and Rahman, T*
  UBICOMP 2019

- A new hierarchical clustering algorithm to identify non-overlapping like-minded communities
  Deepak, T.S., Adhya, H., Kejriwal, S., ***Gullapalli, B.*** *and Shannigrahi, S.,*
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KEY RESEARCH PROJECTS

Self-supervised modeling for opioid administration — May '21 - Present
Unlabeled sensor data is initially used to train an upstream Channel-Temporal Attention TCN model using self-supervised technique. This upstream model is used for downstream tasks of detecting opioid administrations IV or orally.

Joint prediction of cocaine craving and euphoria using structured prediction energy networks — Mar '21 - Apr '21
Joint modeling of cocaine craving and euphoria while using the correlation between these labels with a structured prediction energy network.

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[1] Use URL bhanutejagullapalli.github.io in case hyperlinks don't work

Opioid administration using wearable biosensors   Jul '19 - Feb '21
Detecting opioid administration using physiological signals obtained from wristband of the subjects admitted to hospital for acute pain using a Channel-Temporal Attention TCN.

Sensing cocaine craving, euphoria and drug-seeking behavior using cardiac and respiratory signals   Apr '18 - Feb '19
Built a system that can understand and predict key variables of the addiction loop using ECG and the respiratory signal obtained from a wearable chest band.

Drug Target prediction using Deep Representation Learning   Jan '18 - Apr '18
Using graph convolution and attention mechanism, built an interpretable system which can identify proteins affected by a drug.

Tree-Structured Detector Cascade   May '17 - Aug '17
Developed a novel way to grow and find the optimal configuration of a tree-structured cascade and tested it to smoking detection.

INDUSTRY EXPERIENCE

Samsung R&D Institute, Bangalore, India   Jul '15 - Dec '16
Worked in the Video Editor team of Samsung Camera. Primarily worked on Samsungs Video Editor (Pro/Lite), highlight player, Slow Motion. Developed and implemented theme mode in Video Editor Pro which assists the user in creating stories on Samsung Galaxy S8.   Bangalore, India

Samsung R&D Institute, Bangalore, India   May '14 - Aug '14
Developed a simulation of OLSR (Optimized Link State Routing) Protocol for Tizen OS. Added APIs which extended the functionalities from the Android.   Bangalore, India

COURSEWORK

Key Courses: Advanced Natural Language Processing, Advanced Machine Learning, Machine Learning, Machine Learning Theory, Probabilistic Graphical Models, Artificial Intelligence, Advanced Algorithms, Advanced Information Assurance, Research Methods in Empirical Computer Science

TECHNOLOGY & SKILLS

Languages: Python, Java, Android, C/C++, HTML
Tools & Frameworks: Deep learning with Pytorch, Python Machine learning stack (Numpy/scipy, Scikit-Learn, Statsmodels), Git, LaTeX

ACHIEVEMENTS

- Accepted to Yale's Innovation to Impact program
- My work on opioids has contributed to National science foundation (NSF) smart and connected health grant ($1.1 Million) in 2021 titled *"Collaborative Research: SCH: Psychophysiological sensing to enhance mindfulness-based interventions for self-regulation of opioid cravings"*
- Received Spot Award in Samsung R&D Institute Bangalore for providing good solutions and coding skills
- Won the first prize at Samsung R&D Institute Bangalore tech-fair for developing a location-based filter for Samsung video editor
- Listed among top 0.3% students of 0.5 million appearing in Joint Entrance Exam, IIT-JEE 2011
- Secured 961 rank in All India Engineering Entrance Exam (AIEEE) 2011 taken by 1.2 million people