

HARISH RITHISH SETHURAM

✉ harishrithish7@gmail.com in harishrithish

EDUCATION

2021 - 2023	Masters in Computer Science (Bioinformatics Specialization)	UC San Diego	3.91 / 4.0
2014 - 2018	B.Tech. in Computer Science	NIT-T (India)	

PUBLICATIONS

- > Harish Rithish, Raghava Modhugu, Manmohan Chandraker, and C.V. Jawahar, "Looking Farther in Parametric Scene Parsing with Ground and Aerial Imagery", ICRA, 2021. [Paper](#) [Demo](#)
- > Harish Rithish, Raghava Modhugu, Ranjith Reddy, Rohit Saluja & CV Jawahar, "Evaluating Computer Vision Techniques for Urban Mobility on Large-Scale, Unconstrained Roads", arXiv'21. [Paper](#) [Demo](#)

EXPERIENCE

Present Jan 2022	UC SAN DIEGO RESEARCH ASSISTANT IN BIOINFORMATICS Regulatory Genomics <ul style="list-style-type: none">> Researching with Dr. Stephen Mayfield to understand transcription regulation in green-algae> Developed a motif prediction pipeline to identify Transcription Factor Binding Sites through an ensemble approach which includes probabilistic models (Bayesian) and enumeration based statistical models> Identified ~ 2000 novel potential binding sites in green algae, analyzing their genomics and RNA-seq data> Impact : Green algae is a sustainable and biodegradable plastic alternative; Their scalability is mainly limited by high production costs which can be significantly reduced if their regulatory genomics is unlocked
Apr 2021 Jan 2019	IIIT HYDERABAD & UCSD RESEARCH FELLOW IN COMPUTER VISION Computer Vision <ul style="list-style-type: none">> Worked under the joint supervision of Prof. C.V. Jawahar and Prof. Manmohan Chandraker> Researched scalable & affordable methods for addressing challenges in transportation through computer vision techniques> 1 Publication in ICRA 2021 and 1 Publication in arXiv 2021 - details in Publications section
Nov 2018 Jul 2018	AMAZON SOFTWARE DEVELOPMENT ENGINEER Android App Development Spring Java <ul style="list-style-type: none">> App & Web Developer in Amazon Appstore Tablets and Amazon Appstore Retail Website teams> Work included design analysis, task estimation, feature development, testing and deployment> Special Point of Contact for an Amazon component, owning complete responsibility from design to deployment for both client-side & server-side scripting

INDEPENDENT RESEARCH PROJECTS

Code Demo	HUMAN FALL DETECTION FROM VIDEOS Computer Vision MATLAB <ul style="list-style-type: none">> Detected human fall from static cameras in homes and alerted family members through an app> Modelled human as a simple kinematic body, whereby rapid acceleration along with distinctive orientational change triggers a fall alert> Employed adaptive Gaussian Mixture Model for background subtraction, Least-Squares Fitting of Ellipses to estimate body boundary & Motion History Image to compute body movement speed> Secured 2nd/50 place at Sangam, a competition adjudged by Honeywell; 150+ stars on GitHub
--	---

COLLEGE COURSEWORK

- > Grad Coursework : **Personal Genomics, Parallel Computation in Bioinformatics, Genomics/Proteomics/ Network Biology, Population Genomics**, Convex Optimization, Computer Vision I, AI : Probability Reasoning & Decision Making
- > MOOC : **Foundations of Computational and Systems Biology** (MIT 7.91J), **Machine Learning in Genomics** (MIT 6.047)
- > Undergrad Coursework : Data Structures & Algorithms, Operating Systems, Computer Networks, Compilers, Database Management Systems, Computer Architecture, Software Engineering, Web Technology, Parallel Processing and Algorithms

SKILLS

- > **Programming Languages** : Python, C/C++, Java, MATLAB, R, SQL, MySQL, Javascript, CSS, HTML
- > **Libraries** : BioPython, Keras, Tensorflow, PyTorch, CUDA, oneTBB, OpenCV
- > **Tools/Frameworks** : PLINK, samtools, bcftools, BLAST, bwa, Node.js, Angular.js, REST APIs, AWS, Linux, Github, Git, Docker