

<b>EDUCATION</b>	<b>R.V. College of Engineering, Bangalore, India,</b> <i>Bachelor of Engineering (B.E.),</i> Computer Science and Engineering(CSE) 2012-2016 <div>GPA:8.55/10</div> <b>University of Massachusetts Amherst,</b> <i>M.S./Ph.D.,</i> Computer Science Advisor: Erik Learned-Miller Expected: 2018 - 2023 (Expected) <div>GPA: 3.88/4</div>
<b>PUBLICATIONS</b>	<ol style="list-style-type: none"><li>1. A. Singh*, H. Su*, S. Jin, H. Jiang, <b>C. Manjesh</b>, G. Luo, Z. He, L. Hong, E. Learned-Miller, and R. Cowell. <i>Half &amp; Half: New Tasks and Benchmarks for Studying Visual Common Sense</i>. In CVPR Workshop on Vision Meets Cognition, 2019.</li><li>2. R. Kozma, R. Noack, <b>C. Manjesh</b>. <i>Neuroenergetics of Brain Operation and Implications for Energy-Aware Computing</i>. IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2018.</li><li>3. R. Noack, J. J. J. Davis, <b>C. Manjesh</b>, R. Kozma. <i>Neuro-Energetic Aspects of Cognition - The Role of Pulse-Wave-Pulse Conversion in The Interpretation of Brain Imaging Data</i>. IEEE Symposium Series on Computational Intelligence (SSCI), 2017.</li><li>4. R. Noack, <b>C. Manjesh</b>, M. Ruzinko, H. Siegelmann, R. Kozma. <i>Resting State Neural Networks and Energy Metabolism</i>. IEEE International Joint Conference on Neural Networks (IJCNN), 2017.</li></ol>
<b>TECHNICAL SKILLS</b>	<b>Programming Languages :</b> Python, Java, C, C++, HTML5, CSS, MATLAB  <b>Libraries, Frameworks, Databases, Tools etc. :</b> Pytorch, Tensorflow, Numpy, AWS, Scikit-learn, Apache-Spark, SQL, PSQL, Django
<b>WORK EXPERIENCE</b>	<div><b>Research Assistant</b><div>Jan 2017 - May 2018</div>Biologically Inspired Neural and Dynamical Systems Lab, UMass Amherst<ul style="list-style-type: none"><li>- Worked on modeling the neuro-energetics and interactions in a network of neurons in a cortical column of the brain with a goal of understanding their energy consumption and developing computationally efficient Artificial Intelligence algorithms.</li><li>- Produced a model of cortical column of the brain with parameterization of the amount of energy available in terms of glycogen and ATP and optimized these model parameters to produce necessary brain wave patterns observed during intelligent and creative activity.</li><li>- Produced a GUI in MATLAB to interact with the above model with knobs provided for various parameters.</li></ul></div> <div><b>Research Assistant</b><div>Jan 2019 - Present</div>Computer Vision Laboratory, UMass Amherst  <i>Half &amp; Half Project</i><ul style="list-style-type: none"><li>- The project involved the creation of multiple benchmark datasets and designated self-supervised tasks for each of them. The intent of this project was to allow networks</li></ul></div>

to learn in a self-supervised manner representations which encode information about correlations between different types of objects and the contexts/settings in which they occur.

- I was the key participant in building the Image-to-Image benchmark from the SUN-360 dataset in which each data item consists of a single anchor image and several choices. The anchor comes from one half of an image and the correct choice is the other half of the same image and the associated task is to predict the correct choice given the anchor and 10 choices (9 of which are very similar).

- Resulted in a CVPR, 2019 workshop paper.

#### **Research Intern**

Jan 2016 - June 2016

Samsung Semiconductor R&D Institute, Bangalore, India

- Worked on the optimization of Android display drivers to reduce memory access requirements.

- Successfully implemented a framework to perform partial update of the screen while rendering frames of videos resulting in an average reduction of 10% on the load of the Direct Memory Access controller (DMA) across a range of videos.

#### **TEACHING EXPERIENCE**

##### **Teaching Assistant: Machine Learning (CS 589)**

Sep 18 - Dec 18

Graduate Machine Learning course. Responsibilities included drafting and grading home work assignments, holding office hours for students, proctoring, drafting questions and grading questions for the final exam.

##### **Teaching Assistant: Introduction to Programming Methodologies with Java (CS 121)**

Jan 19 - May 19

Undergraduate Programming with Java Course Responsibilities included holding office hours, teaching and conducting lab sessions, grading mid-terms and final exams and holding workshops for the students.

#### **PROJECTS**

##### **Website for Providing Mental Health Diagnosis Using Natural Language Processing**

Nov 2017

A creative endeavour created at the Hack UMass, 2017 Hackathon. The website accepts textual input from users about mental health issues they are facing, provides a diagnosis and points them to the relevant resources.

**Link:** <https://www.wecare-mind.com>

##### **Building a knowledgebase of scientific authors, Information Extraction and Synthesis Laboratory (IESL), UMass Amherst**

Nov 2017

- Worked on developing a knowledge base for enabling us to reference the email addressed of scientific research authors.

- Built a pipeline for mining email addresses from publications and performed entity resolution to map them to their respective authors.

- Extracted email addressed from around 5500 publications, matched email addresses to roughly 4,481 unique authors and linked their email addresses to the metadata of around 235,200 papers they were authors for.

#### **RELEVANT COURSES**

- Advanced Machine Learning, (COMPSCI 689)

- Advanced Algorithms (COMPSCI 611)
- Machine Learning (COMPSCI 589)
- Natural Language Processing (COMPSCI 585)
- Advanced Visual Analytics (COMPSCI 670)
- Natural Language Processing (COMPSCI 585)
- Advanced Information Assurance (COMPSCI 660)
- Neural Networks (COMPSCI 682)
- Advanced Databases (COMPSCI 645) - In Progress