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| **Roh****it Philip**  |

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**Computer Vision Engineer**

*Passion for delivering computer vision and machine learning solutions*

Dynamic and proactive professional with expertise in conceptualizing and developing advanced industrial computer vision software solutions, collaborating and building ideas with other team members, and delivering solutions to wide ranging projects. Enthusiastic, creative, technical highflyer with a PhD in Electrical and Computer Engineering and hands-on algorithm and software development. Proven ability in inventing, implementing, and testing software algorithms and improving algorithms of others to offer customers optimal solutions. Demonstrated capabilities in leading computer vision research projects, investigating machine learning approaches to MRI reconstruction, and maintaining custom-built system software. Excellent communication and leadership acumen, with the capability to train, coach, and mentor project teams and engage effectively with relevant stakeholders.

Highlights of Expertise

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| * Computer Vision
* Machine Learning Algorithms
* MRI Reconstruction
* Applied Research Projects
* Deep Learning Technologies
* Programming
* Data Analysis
* Teamwork and Capability Building
 | * Project Management
* Image/Video/Signal Processing
* Web/GUI Development
* Image/Video Analysis
* Object Detection/Tracking
* Image Segmentation/Analysis
* Hardware Integration
* People Leadership and Development
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**Career Experience**

**University of Arizona, Tucson, AZ (Department of Medical Imaging)**

**POSTDOCTORAL RESEARCH ASSOCIATE– I** (May 2020 to Present)

Managed several computer vision research projects including MRI reconstruction, compressed sensing, image segmentation, and image analysis. Assessed carotid artery with potential impact on stroke.

Key Achievements:

* Led the research and development of MRI scans, including MRI reconstruction and image analysis and introduction of machine learning approaches.
* Established image analysis protocols and developed several GUIs for carotid artery analysis, along with the development and maintenance of code.
* Published an abstract on MRI research at ISMRM.

**GRADUATE RESEARCH ASSISTANT** (August 2013 to May 2020)

Supported delivery of several projects ranging from image segmentation, object detection, object tracking, web development, and hardware integration, as a member of the Signal and Image Laboratory (SaIL). Responsible for research and development of image analysis solutions. Assisted the Advisor in writing an NIH grant proposal.

Key Achievements:

* Headed detection of objects of interest (zebrafish) from video data and tracking of objects of interest from frame to frame.
* Oversaw maintenance of custom-built system software to integrate a network of Raspberry Pi computer-controlled infrared cameras.
* Delivered a machine learning solution to automate a zebrafish damage scoring process as well as an object detection and tracking solution using state of the art object detection and tracking algorithms to identify and track zebrafish in the video.
* Developed a network of interconnected Raspberry Pi computers in coordination with a colleague.
* Authored a new theory to solve an issue that arises with performance metrics such as precision, recall, and F-score when analyzing object detection algorithms that produced split positives and merged truths.
* Created a proof-of-principle solution for a patent application related to zebrafish detection and tracking.
* Designed algorithms to evaluate neuroscience data from electrophysiological recordings in the non-human primate amygdala.

**Takeda Pharmaceuticals (formerly Millennium), Cambridge, MA**

**BIOMEDICAL IMAGING INTERN** (May 2014 to August 2014)

Engaged in designing custom software to analyze the efficacy of treatment in preclinical imaging studies, using PET scans of tumors implanted in mice and treated with pharmacological compounds in different stages of development. Assessed/maintained data and presented results.

Key Achievements:

* Programmed a tumor classification algorithm using machine learning and segmented tumors from PET scans, extracting salient features from the segmented tumors, including size, shape, and texture.
* Trained support vector machine classifiers to perform classification of tumors.

**Webseer Technology Private Limited, Bangalore, India**

**RESEARCH ENGINEER** (June 2012 to July 2013)

Supervised research and development of image analysis, signal processing solutions, web development, and basic programming, carrying out image segmentation on a wide variety of natural and medical images. Reviewed MRI images to determine volume.

Key Achievements:

* Developed an algorithm to analyze color content in strawberries and performed k-means clustering to separate strawberries from the background.

Additional Experience

**Systems QA Analyst** (2010 to 2012)  Agama Solutions Inc., Fremont, CA

**Assistant Research Engineer** (2009 to 2010)  Arizona Cancer Center, Tucson, AZ

**Graduate Research Assistant/Teaching Assistant** (2005 to 2008)  University of Arizona, Tucson, AZ

**Education & Credentials**

The University of Arizona, Tucson, Arizona, 2013- 2020

**PH. D. - DOCTOR OF PHILOSOPHY, Major:** **Electrical and Computer Engineering, GPA: 3.63/4.00**

The University of Arizona, Tucson, Arizona, 2005- 2008

**M.S. - MASTER OF SCIENCE, Major: Electrical and Computer Engineering, GPA: 3.38/4.00**

Anna University, Chennai, India, 2001- 2005

**B.E. – BACHELOR OF ENGINEERING, Major: Electronics and Communication Engineering, GPA: 77.71/100.00**

***IT Skills:*** MATLAB, OpenCV, IDL, ImageJ, Python, R, C, and C++ programming languages, JMP, Prism***,*** Perl, CGI, JavaScript, VB Script, and bash/shell scripting, Tensorflow, Keras, PyTorch, Putty, CMake, MS Excel (including API programming), MS Word, MS PowerPoint, and LaTeX***,*** Certified in Java and SQL