Curriculum Vitae

Vikas Thamizharasan

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Education

2014 - 2018 **International Institute of Information Technology**, Hyderabad
Bachelor Of Technology
Computer Science and Engineering

2012 - 2014 **New Millennium School-DPS**, Bahrain
Senior Secondary

Work Experience

Aug 2018- Feb 2019 **Research Intern : INRIA - Sophia Antipolis**, France
STARS Team in collaboration with Blu Manta (French Startup),
Advised by Dr.Antitza Dantcheva and Dr.François Brémond
Internship focused on (i) performing depth estimation and (ii) generating low-dimensional face embedding for face analysis using deep learning techniques from raw data acquired using state of the art structured light and active infrared hardware.
Tensorflow, PyTorch, MATLAB
[Presentation] [On going Publications]

May 2018- Aug 2018 **Software Engineer**, *Graphics*, Carl Zeiss India, Bangalore.
Worked on their Volume Rendering framework.

May 2017- Aug 2017 **Intern : Google Summer of Code**, Google
Mentored by Fabien and Souriya from Rainbow team, INRIA and hosted by Google
ViSP is a cross platform library built for visual tracking and visual servoing by Lagadic team from INRIA, France. The goal of this internship was to automate the creation of ViSP CAD model files from existing 3D formats and achieve perfect, loss-less conversion.
Source Code and Wiki **Qt, C++, Blender, Python**

Projects

2018 **Virtual Garment Fitting from Single Image**
A single-shot single image-based approach for virtual cloth fitting, containing an unconstrained cloth parser and a cloth fitter. Cloth segmentation and parsing achieved using graph cut and retrieval based approach combining pre-trained global models and local clothing models learned on the fly. Cloth fitting involved combining pose estimation and feature point extraction followed by 2D mesh morphing and warping of the extracted clothing items.
2017 Microsoft CFD winning project, All India finalist
Caffe, OpenCV, MATLAB

2017 **3D Object Reconstruction and Manipulation with a single image**
Advised by Dr.Vineet Gandhi, CVIT (Computer Vision Lab), IIIT-H
Inspired by 3-Sweep and Sketch-Based Modeling to reconstruct 3D models from a single image using geometric primitives and model-to-image alignment using constrained optimization. Computed texture (diffuse + normal) maps for rendering reconstructed models with scene illumination predicted from image and created a tool to edit the image using 3D manipulation.
PyQt, PyQt3D, OpenCV, AutoDiff, C#
Source Code

2017 **Query focused Abstractive Summarization**
Deep learning approach to generate summaries of a document covering all salient point given a query. Models used: LSTM, RNN with GRU, diverse attention based encoder-decoder model, GloVe. Based on *"Diversity driven Attention Model for Query-based Abstractive Summarization"*.
Tensorflow, Gensim, NLTK

2017 **Search Engine for Wikipedia**

Created a search engine for Wikipedia (60GB dump) from scratch. Processed and tokenized large dump into inverted indexes. Used multiprocessing for speed up. Two-pass multi-way merge sort to create single index(4GB). Used Cosine similarity with modified parameters for ranking. Project split into tasks and ran in parallel for fast retrieval and search.

2016 **Ultimate Tic-Tac-Toe AI**

Created an AI to play a modified version of UTTT using a min-max algorithm with alpha-beta pruning and a custom heuristic function.

2015 **Vshell**

Course Project under Dr.Suresh Purini(Assistant Prof, IIITH), Operating Systems. Made Linux Shell from scratch in C.
Source

Other Experience

2018 **Developer**, *Google Summer of Code*, Google & Intel Open Source (01.org).
Selected but opted for INRIA internship instead.

2018 **Volunteer**, IEEE International Conference on Image Processing, Applications and Systems (IPAS 2018).

2016 **Teaching Assistant**, IIIT-Hyderabad.

2016 **Software Intern,** Rsquare Technologies, Bahrain.

Achievements

2017 Microsoft Code.Fun.Do Winner Hyderabad.
2016 Finished in Top 20 Microsoft Code.Fun.Do All India Finals.
2013 Top 5 in WHO Art competition.
2013 2400/2400 in SAT Subject Test.

Courses taken

2018 • Database Systems • Software Engineering • Linear Algebra.

2017 • Information Retrieval and Extraction • Distributed System
• Statistical Mechanics in AI (Machine Learning) • Computer Vision.

2016 • Digital Image Processing • Complexity and Advanced Algorithms • Computer Graphics
• Artificial Intelligence • Principles of Programming Languages • Digital Signal Analysis.

2015 • Data Structures • Computer Networks • Operating Systems

Technical skills

Programming Languages	Python, C, C++, C#, Shell, Racket/Scheme, Javascript, HTML and CSS, PHP
Frameworks	Tensorflow, Pytorch, scikit-learn, Qt, OpenGL, Windows Form App, RMI
Tools	MATLAB, Blender, Inkscape.
TOEFL	113 / 120

Interests and Activities

Computer Vision, Computer Graphics, ML, Image Processing, Geometric deep learning, Evolutionary Robotics VR/AR, Web and Game Development, Open Source, Art, Sculpting, Drumming, Psychology, Cosmology, Chess.