

# AJAY VISHWANATH

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## EXPERIENCE

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### Agency for Science, Technology and Research (A\*STAR)

October 2019 - Present

*Research Engineer*

- Working on emotion recognition and generation in virtual agents at the *Social and Cognitive Computing* division
- Working towards extracting appraisals from English language
- Developing topic modelling algorithms using natural language processing techniques from social media data

### Nanyang Technological University

April 2018 - October 2019

*Research Associate*

- Working on social robots, virtual characters and affective computing
- Associated with Institute for Media Innovation and Dauwels Lab
- Conducted studies on human-robot interaction, human-avatar interaction and emotion perception
- Co-supervised students and interns on thesis titles ranging from social signal processing, 3D computer graphics animation, and, software engineering
- Developed software to deploy a social robot in an insurance company

### Dunst Consulting LLC.

June 2015 - June 2016

*Backend Developer*

- Developed the back-end of web and mobile applications using JavaScript and NoSQL, a template of the code can be found [here](#)
- Deployed these applications in virtual machines
- Designed the database architecture and network communication protocol

### Tata Consultancy Services Ltd.

July 2013 - May 2015

*Assistant Systems Engineer*

- Developed a Product Information Management (PIM) software using a Java-based an SAP e-Commerce tool called HYBRIS
- Enhanced websites (BIGW, Dan Murphys and Masters) for Woolworths Ltd., using Java-based BLUE-MARTINI framework
- Supported a middle-ware integration system based on webMethods

## EDUCATION

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### National University of Singapore

July 2016 - January 2018

M.Comp., Computer Science

Specialization in computer vision and machine learning

**Dissertation:** *Real-time Action Hand Detection from Ego-centric Depth Sequences*

### Manipal University

July 2009 - May 2013

B.E., Electronics and Communication Engineering

Manipal, India

## PUBLICATIONS

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- **Vishwanath, A.** et al., 2019, October. Humanoid co-workers: How is it like to work with a robot?. In 2019 28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN) (pp. 1-6). IEEE.
- Baka, E., **Vishwanath, A.**, et al., 2019, June. Am I Talking to a Human or a Robot?: A Preliminary Study of Humans Perception in Human-Humanoid Interaction and Its Effects in Cognitive and Emotional States. In Computer Graphics International Conference (pp. 240-252). Springer, Cham.

## SKILLS

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<b>Programming Languages</b>	C/C++, Python, Java, JavaScript, Bash, C#
<b>Software &amp; Tools</b>	Unity, OpenCV, TensorFlow, scikit-learn, Matplotlib, L <sup>A</sup> T <sub>E</sub> X
<b>Web Technologies</b>	HTML5, CSS3, D3JS, NodeJS, MongoDB

## RELEVANT COURSES (MASTERS)

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<b>Core Courses</b>	<b>Other Courses</b>
Computer Vision & Pattern Recognition	Uncertainty Modeling in AI
Deep Learning & Neural Networks	AI Planning & Decision Making
Art of Computer Science Research	Simulation & Modeling Techniques

## INTERNSHIPS

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**Agency for Science, Technology and Research (A\*STAR)**      January 2017 - December 2017  
*Graduate Research Intern*

- Worked on machine learning for computer vision: action detection and pose estimation based projects at Bioinformatics Institute (BII) for Master's dissertation
- Developed and enhanced machine learning algorithms based on random forests and convolutional neural networks
- Data acquisition and processing pipeline for a first person vision system
- **Application:** *Drone control using hand gestures*

**Instant Edge - The Enterprise Transformation Platform**      September 2016 - January 2017

- Developed front-end using the data visualization framework D3JS
- Enhanced CSS and JavaScript based code for modern look-and-feel and cross-browser compatibility

**SmartShehar**      September 2014 - January 2014

- Built a mobile-friendly web application to perform a preliminary ADHD assessment on children
- Technologies used were PHP, JQuery Mobile, HTML and CSS

**Samsung Research Institute**      September 2014 - January 2014

- Enhanced *TouchWiz*, Samsung's proprietary operating system
- Improved battery life and resolved mobile phone hardware issues

## OTHERS

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**Hobbies:** Running, avid reader of non-fiction, football, discussing philosophy.

**References** will be provided on request.