Joseph K J

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Research Interests

Computer Vision, Deep Learning, Machine Learning.

Education

Indian Institute of Technology (IIT), Hyderabad	9.24 / 10	
M. Tech + PhD Dual Degree in Computer Science and Engineering	*Jan 2017 - present*	
Advisor: Dr. Vineeth N Balasubramanian		
Government Engineering College (RIT), Kottayam	80.43 %	
B. Tech. in Computer Science and Engineering	*May 2013*	
Loyola School, Trivandrum	92.93 %	
Indian School Certificate (ISC), Class 12	*March 2009*	
Loyola School, Trivandrum	93.00 %	
Indian Certificate of Secondary Education (ICSE), Class 10	*March 2007*	

Research Experience

- **Research Intern, Inception Institute of AI, Abu Dhabi, UAE**. Nov 2019 - May 2020
  Worked on adding lifelong learning capability to object detectors, via meta-learning.

- **Research Intern, Harada Lab, University of Tokyo, Japan**. June - July 2018
  Explored areas related to multi-modal modeling, specifically on generating images from textual descriptions.

- **Graduate Research Assistant, IIT Hyderabad**. Jan 2017 - June 2018.
  Worked on detection and recognition from drones. Project was sponsored by DRDO, Government of India.

Publications

• 2020 •

8. K J. Joseph, V. Balasubramanian, Meta-Consolidation for Continual Learning, 34th *Conference on Neural Information Processing Systems,* **NeurIPS 2020**.

7. U. Maniyar, K J. Joseph, A. Deshmukh, U. Dogan, V. Balasubramanian, Zero-shot Domain Generalization, 31st *British Machine Vision Conference,* **BMVC 2020**. (Also presented at *Visual Learning with Limited Labels Workshop, International Conference on Computer Vision and Pattern Recognition,* **CVPR-W 2020**.) [Link]

6. K J. Joseph, J. Rajasegaran, S. Khan, F. Khan, V. Balasubramanian, Incremental Object Detection via Meta-Learning, *Under Review at IEEE Transactions on Pattern Analysis and Machine Intelligence.* [Link]

• 2019 •

5. K J. Joseph, V. Teja, K. Singh, V. Balasubramanian, Submodular Batch Selection for Training Deep Neural Networks, 28th *International Joint Conference on Artificial Intelligence,* **IJCAI 2019**, *Macao, China.* (Also presented orally at *Negative Dependence in ML Workshop, International Conference on Machine Learning,* **ICML-W 2019**, *Long Beach, USA.*) [Link]

4. K J. Joseph, A. Pal, S. Rajanala, V. Balasubramanian, C4Synth: Cross-Caption Cycle-Consistent Text-to-Image Synthesis *IEEE Winter Conference on Applications of Computer Vision,* **WACV 2019**, *Hawaii, USA.* [Link]

3. K. J. Joseph, V. Balasubramanian, MASON: A Model AgnoStic ObjectNess Framework, *International Workshop On Autonomous Navigation in Unconstrained Environments, European Conference on Computer Vision,* **ECCV-W 2018**, *Munich, Germany.* [Link]

2. Pengfei Zhu, Longyin Wen et al., VisDrone-DET2018: The Vision Meets Drone Object Detection in Image Challenge Results, *European Conference on Computer Vision, Workshop Proceedings,* **ECCV-W 2018**, *Munich, Germany.* [Link]

1. K. J. Joseph, A. Pal, S. Rajanala, V. Balasubramanian, Zero-Shot Image Generation by Distilling Concepts from Multiple Captions, *Towards Learning with Limited Labels Workshop, International Conference on Machine Learning,* **ICML-W 2018**, *Stockholm, Sweden.* [Link]

Work Experience

- **Senior Software Engineer, Oracle Corporation,** July 2016 - Dec 2016.
  Developer at Oracle PeopleSoft Cloud Manager product team. Contributed to design, coding, implementation and UX of the product.

- **Software Engineer, Oracle Corporation,** June 2013 - July 2016.
  As part of Oracle Peoplesoft Platforms team, I handled PeopleTools Push Notification Framework, PeopleTools Automated Configuration Management Framework and PeopleSoft Internet Architecture.

Service

- Program Committee Member of IJCAI 2020, 2021.
- Reviewer: (Journals) IEEE Transactions on Multimedia, Springer Machine Learning Journal.
        (Conferences) AAAI 2021, ACML 2020, ICVGIP 2018, NCVPRIPG 2019.
- Subreviewer: NeurIPS 2020, ICLR 2020, IJCAI (2018, 2019), ACML 2020, ECCV 2020, CVPR 2019, ICCV 2017, WACV (2018, 2019, 2020).

Achievements

- Awarded *Excellence in Research Award 2020* from IIT Hyderabad. (one of 24 students, across 16 departments)
- Awarded TCS Research *PhD Fellowship 2019.*
- *Honorable Mention* for our essay submission at ICVSS 2019, Italy.
- Awarded *Microsoft Research Travel Grant* and *ACM-India/IARCS Grant* to present our work at IJCAI 2019.
- Awarded *Certificate of Appreciation in Research* from IIT Hyderabad in March 2019.
- Awarded cash prize for being top 20% of participants at 'Summer School on Computer Vision: 2017', CVIT, IIIT Hyderabad.
- Runner up for *Best Student Project Contest 2013* organized by the Computer Society of India, Trivandrum Chapter.

Research Forums Attended

- Conferences: ECCV 2018, ICVGIP 2018, WACV 2019, IJCAI 2019
- International Computer Vision Summer School - ICVSS 2019, Sicily, Italy.
- Microsoft Academic Research Summit: 2018, 2019
- Amazon Research Days 2019

Skills

- Languages: Python, Java, C, JavaScript
- Libraries and Tools: Numpy, Scipy, scikit-learn, OpenCV, Caffe, TensorFlow, PyTorch
- Miscellaneous: Shell Scripting, Dockers, Node.js, Hybrid Mobile App development, Git, ClearCase

Relevant Courses

- CS6510 Applied Machine Learning
- CS5370 Deep Learning for Vision
- CS6230 Optimization Methods in ML
- CS5350 Bayesian Data Analysis
- CS6440 Special Topics in Machine Learning
- CS6010 Advanced Data Structures and Algorithms

Positions / Responsibilities

- Founding Secretary of IEEE Computer Society, RIT Chapter.
- Chief Editor of Click!, the half yearly publication of IEEE Computer Society, RIT Chapter.
- Facilitator at Fun@Work, an Oracle Volunteer initiative.

References

- Dr. Vineeth N Balasubramanian, Associate Professor, Department of Computer Science & Engineering, IIT Hyderabad, Sangareddy, Telangana - 502285, India. E-mail: vineethnb@iith.ac.in
- Dr. Srijith P K, Assistant Professor, Department of Computer Science & Engineering, IIT Hyderabad, Sangareddy, Telangana - 502285, India. E-mail: srijith@iith.ac.in