

Juhan Bae

EDUCATION **University of Toronto**, Toronto, Canada
Bachelor of Science, Computer Science and Statistics. *Sep 2015 - Aug 2019 (Expected)*
Focuses on Artificial Intelligence and Computer Vision.
CGPA: 3.99 / 4.00

PROFESSIONAL EXPERIENCE **Epson America**
Software Developer - Algorithm Research *May 2017 - May 2019*

- Worked as a member of a research team that prototypes and develops core computer vision and machine learning technologies for EPSON's next generation products.
- Designed computer vision proof-of-concept algorithms in Python/C/Matlab under supervision of experienced researchers.
- Evaluated algorithm concepts and analyzed research results.
- Participated in development of computer vision and image processing software.

RESEARCH INTERESTS Optimization and generalization in machine learning.
Uncertainty estimation of deep models.

WORKSHOP PUBLICATIONS **Juhan Bae**, Guodong Zhang, Roger Grosse. 2018. Eigenvalue Corrected Noisy Natural Gradient. In *NIPS Workshop on Bayesian Deep Learning*.

Sebastian Kmiec, **Juhan Bae**, Ruijian An. 2018. Learnable Pooling Methods for Video Classifications. In *ECCV: The 2nd Workshop on YouTube-8M Large-Scale Video Understanding*. **oral**

RESEARCH EXPERIENCE **Kronecker Bases for Bayesian Neural Networks**
Supervisor : Professor Roger Grosse *Aug 2018 - Apr 2019*

- Researched developing accurate approximations to posterior uncertainty in Bayesian neural network.
- Constructed a prototype to investigate and evaluate the effectiveness of an accurate diagonal variance in matrix-variate Gaussian.
- Introduced a more flexible posterior approximation, eigenvalue-corrected matrix-variate Gaussian, and submitted the paper to NIPS workshop on Bayesian Deep Learning.

AWARDS & ACHIEVEMENTS **Winner of ASA DataFest** (3rd place) *2018*
University of Toronto Dean's List *2016, 2017*
St.Michael's In-course Scholarship *2017, 2018*

TEACHING EXPERIENCE **University of Toronto**
Teaching Assistant - Supervisor : Professor David Liu *Jan 2017 - Apr 2017*

- Mathematical Expression and Reasoning (CSC165) in the Department of Computer Science.
- Covered elementary proof techniques, number theory, algorithm analysis, graphs, and trees.
- Marked students works on simple proofs and participated in tutorial meetings to try different approaches when explaining mathematics concepts.

PATENTS Dibyendu Mukherjee, Bowen Chen, **Juhan Bae**. 2018. Fast 6D Pose Estimation with Synthetic Textureless CAD model for Mobile Applications. J0201221US01.

TECHNICAL **Languages:** Python, C, C++, MATLAB, Java, Verilog, L^AT_EX
SKILLS **Research Tools:** OpenCV, TensorFlow, PyTorch, SQL

ACTIVITIES **Department of Computer Science Student Ambassador** *Sep 2016 - May 2017*
 Vice President of the Association of Korean Computer Science *Jan 2016 - Apr 2019*