Kunal Ghosh

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EDUCATION

- **DeeplBayes Summer School**
Moscow, Aug 2019.
- **Machine Learning Summer School**
Madrid, Aug 2018.

- **Master's in Computer Science**
Major: Machine Learning and Data Mining
Minor: Mathematics
Aalto University, Helsinki, Finland
GPA - 4.63/5
Graduated (with Honours) Nov 2017

- **Bachelor's in Computer Science**
Visvesvaraya Technological University
Grad May 2011 | Bangalore, India

COURSEWORK

MASTER'S
- Deep Learning
- Gaussian Processes
- Kernel Methods
- Machine learning advanced probabilistic methods
- Bayesian Data Analysis
- Algorithmic Methods of Data Mining
- Convex Optimization
- Computational Science
- Programming Parallel Computers

TEACHING

Teaching assistant for Courses on:
- **Deep Learning** 2016-2020
- **Bayesian Data Analysis** 2018-2020

SKILLS

Good with:
- Python (Including PyTorch, Numpy, Scipy, SciKit Learn and working knowledge of Tensorflow) • Matlab & Octave • Apache Spark

Some knowledge of:
- C • C++ (Cuda & OpenMP) • Stan (Probabilistic Programming) • SQL • Shell Scripting • Java • LaTeX • Apache Lucene

WORK EXPERIENCE

AALTO UNIVERSITY | Doctoral Candidate
June 2018 - now | Espoo, Finland
- Developing novel machine learning models and algorithms for applications in materials science. Supervised by Prof. Aki Vehtari (Dept. Computer Science) and Prof. Patrick Rinke (Dept. of Applied Physics).

AALTO UNIVERSITY | Research Assistant - Honours Program
May 2016 - August 2017 | Espoo, Finland
- Developed deep learning models to predict molecular electronic properties. Supervised by Prof. Vehtari (Dept. Computer Science) and advised by Prof. Patrick Rinke (Dept. Applied Physics).
- Studied semi-supervised extensions of the Variational Auto-Encoder and related models. Supervised by Prof. Tapani Raiko, Prof. Aki Vehtari and advised by Dr. Jyri Kivinen.

AMAZON | Software Development Engineering in Test
Dec 2013 - Aug 2015 | Bangalore, India

AMAZON | Quality Assurance Engineer
Aug 2011 – Nov 2013 | Bangalore, India

OWNCLOUD.ORG | Google Summer of Code Intern
May 2011 – Aug 2011

THESIS & PUBLICATIONS

- **Kunal Ghosh**, Annika Stuke, Milica Todorović, Peter Bjørn Jørgensen, Mikkel N. Schmidt, Aki Vehtari and Patrick Rinke. *Deep learning spectroscopy: neural networks for molecular excitation spectra*, Wiley Advanced Science, 2019. Link.

- Annika Stuke, Milica Todorović, Matthias Rupp, Christian Kunkel, **Kunal Ghosh**, Lauri Himanen and Patrick Rinke *Chemical diversity in molecular orbital energy predictions with kernel ridge regression*, Journal of Chemical Physics, 2019. Link

- Annika Stuke, Milica Todorović, **Kunal Ghosh**, Aki Vehtari and Patrick Rinke. *Spectral property prediction with artificial neural networks*, Abstract published in Deutsche Physikalische Gesellschaft e.V. 2017, Link

- *Deep Learning for Predicting Molecular Electronic Properties.*, Master's Thesis, Aalto University, 2017, Link

AWARDS

2018   **Travel Grant** (1000 €) from the Education Network in Condensed Matter and Materials Physics, Dept. of Applied Physics, Aalto University.

2016   Inducted into the Machine Learning **Honours Program** at Aalto University. Awarded for maintaining good progress in studies (completed 63 ECTS out of 90 in the 1st year) while maintaining good grades (4.55 out of 5)

2014 2nd/100 teams. Amazon Internal Machine Learning Contest.

2013   **99.5 percentile** in GATE 2013. 1019th/224160 candidates.

2004 29th/~2×10^5 candidates. National Talent Search Scholarship. State Level.