TAEDONG YUN

linkedin.com/in/tedyun

Experience

Google LLC — **Cambridge, MA**
- **Software Engineer** — *Jun 2018 – Present*
- Researcher & software engineer in the genomics team in Google Brain, Google Research, and Google Health. Conducted novel genomics & bioinformatics research using machine learning, developed (open-source) software for processing genomics data.

Oracle Corporation — **Burlington, MA**
- **Senior Member of Technical Staff, Software Developer & Data Science Researcher** — *Aug 2013 – Jun 2018*
- Developed Business Intelligence (BI) & analytics applications that address data reporting, exploratory analysis, decision support, and planning. This includes conducting research on data visualization and implementing client-side reports consisting of multiple types of mutually interactive visualizations in a BI web front-end.

HubAnalytics LLC — **Cambridge, MA**
- Quantitative Data Analyst Intern — *Jan 2013*
- Analyzed pay-per-click campaigns in the financial services market and optimized the campaigns to fit consumer needs, with the goal of delivering high quality leads to lending institutions.

4-58th Airfield Operations Battalion, Eighth United States Army — **Seoul, South Korea**
- Non-Commissioned Officer & Air Traffic Controller — *Apr 2006 – Feb 2008*
- Performed honorable duties as a sergeant of the Korean Augmentation Troops to the U.S. Army.

MIT Department of Mathematics — **Cambridge, MA**
- **Teaching Assistant / Recitation Instructor**: Calculus, Linear Algebra. — *Jun 2009 – May 2013*
- **Research Assistant**: Research in Algebraic & Enumerative Combinatorics.
- Mentor for The Directed Reading Program: Taught a reading course on Matroid Theory.

KAIST Institute for Gifted Students — **Daejeon, South Korea**
- Teaching Assistant — *Mar 2004 – Feb 2006*
- Designed and taught courses for mathematically talented high school students.

Education

Massachusetts Institute of Technology (MIT) — **Cambridge, MA**
- **Ph.D. in Mathematics** — *Sep 2008 – Jun 2013*
- Thesis: *Diagrams of Affine Permutations and Their Labellings*. Advisor: Richard P. Stanley.
- Areas of Research: Combinatorics, Graph Theory & Discrete Mathematics.
- Studied discrete structures appearing in various aspects of mathematics. This includes counting algebraic & geometric structures of a given kind & size, characterizing when certain criteria can be met, constructing and analyzing objects with the criteria, and categorizing these objects using combinatorial & algebraic methods. Frequently utilized mathematical programming languages to acquire examples, to visualize them, and to observe common patterns or anomalies.
- GPA 5.0/5.0.

Korea Advanced Institute of Science and Technology (KAIST) — **Daejeon, South Korea**
- **B.S. in Mathematical Sciences**, *Summa cum Laude.* — *Mar 2003 – Aug 2008*
- GPA 4.17/4.3 (98.55/100).

Harvard University — **Cambridge, MA**
- Summer Session (8-credit undergraduate economics courses). — *Jun 2004 – Aug 2004*
- GPA 4.0/4.0.

Publications, Preprints, & Articles

Accurate, scalable cohort variant calls using DeepVariant and GLnexus (with H Li, P-C Chang, M F Lin, A Carroll, C Y Mclean), *bioRxiv*, doi.org/10.1101/2020.02.10.942086, 2020.
Improved non-human variant calling using species-specific DeepVariant models (with C Y McLean, P-C Chang, A Carroll), *DeepVariant Blog*, 2018.
Balanced Labellings of Affine Permutations (with H Yoo), *Discrete Mathematics and Theoretical Computer Science Proceedings*, 25th International Conference on Formal Power Series and Algebraic Combinatorics, 779-790, 2013.
Rainbow Graphs and Switching Classes (with S Oh and H Yoo), *SIAM J. Discrete Math.*, 27(2), 1106–1111, 2013.
Diagrams of Affine Permutations and Their Labellings, *Massachusetts Institute of Technology*, Doctoral Thesis, 2013.

Conference Presentations

Accurate, scalable cohort variant calls using DeepVariant and GLnexus, *Genome Informatics,* Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 2019.
Diagrams of Affine Permutations and Their Labellings, *Stanley@70 Conference,* Massachusetts Institute of Technology, Cambridge, MA, 2014.

Honors & Awards

Math Fellowship Awards, MIT Department of Mathematics *Sep 2008 – Jun 2013*
Samsung Scholarship, Samsung Foundation of Culture *Nov 2007 – Jun 2013*
- Granted full financial support for graduate study.

Presidential Science Scholarship, Korea Science & Engineering Foundation *Mar 2003 – Feb 2006*
- Awarded by the President of South Korea. Granted full financial support for undergraduate study.

Honor Scholarship, KAIST Department of Mathematical Sciences *Sep 2004 – Feb 2006*
- Highest GPA in the Department of Mathematics.

Samsung Humantech Thesis Prize, Samsung Electronics *Feb 2003*
- High School Thesis: *The Fastest Method to Pick the Winner from a Group through Rock-Paper-Scissors.*

National High School Academic Competition, Korea University *May 2000*
- Grand Prize (1st place) in Mathematics

Online Education & Certificates

HMX, Harvard Medical School *Mar 2019 – Jun 2020*
- Completed fundamental medical school courses (*Genetics, Biochemistry, Pharmacology, Immunology*) and specialized courses (*Cancer Genomics and Precision Oncology*).

Deep Learning Specialization, deeplearning.ai with Coursera *Feb 2018*
- 5 in-depth courses about deep learning, developed by Andrew Ng: *Neural Networks and Deep Learning*, *Improving Deep Neural Networks (Hyperparameter tuning, Regularization and Optimization)*, *Structuring Machine Learning Projects*, *Convolutional Neural Networks*, *Sequence Models*.

Data Science Specialization, Johns Hopkins University with Coursera *April 2016*
- 10 courses including a capstone project about the entire data science pipeline: *The Data Scientist's Toolbox*, *R Programming*, *Getting and Cleaning Data*, *Exploratory Data Analysis*, *Reproducible Research*, *Statistical Inference*, *Regression Models*, *Practical Machine Learning*, *Developing Data Products*, *Data Science Capstone*.

Engineer Information Processing, Human Resources Development Service of Korea
- A government qualified engineer for planning, analyzing, designing, implementing, testing, operating, and maintaining an information system.