

# TUNG D. NGUYEN

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## EDUCATION

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**Illinois Institute of Technology** (summa cum laude) **Graduated:** Dec'19  
B.S. in Computer Science; Minor in Applied Mathematics **Major GPA:** 3.95/4.0; **Cumulative GPA:** 3.86/4.0

### Selected Coursework:

- **CompSci:** Machine Learning, Social Network Analysis, Deep Learning, Computer Vision, Computer Graphics
- **Applied Math:** Probability and Statistics, Differential Equation, Linear Algebra, Multivariate Calculus

## PUBLICATION

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### Estimating Tie Strength in Follower Networks to Measure Brand Perceptions [pdf]

Tung Nguyen, Li Zhang, Aron Culotta. *In Proceedings of the 2019 International Symposium on Foundations and Applications of Big Data Analytics (ASONAM/FAB)*. (3 citations in Google Scholar)

### Utilizing Starch and Clay Mineral to Make Affordable Controlled-Release Fertilizer [pdf]

Tung Nguyen, Huy Nguyen, Trung Le, Ha Dao, Khoi Nguyen, Thang Tran, Manh Nguyen. *In Journal of Science & Technology Issue 52 - Vietnam Academy of Science and Technology*.

## HONORS & AWARDS

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- Dean's List for 9 consecutive semesters, Illinois Institute of Technology
- Leaders in Science and Technology Scholarship, Illinois Institute of Technology
- International Scholarship, Illinois Institute of Technology
- Winner, HackRice, 2016
- 2nd Place, Wells Fargo IIT Finance Hackathon, 2016
- 1st Place, Hanoi Intel Science and Engineering Fair, 2013

## EXPERIENCE

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### Google Search

*Machine Learning Engineer*

Mar'20 - Present

*New York, NY*

- Build triggering decision classifier for Search Generative Experience, a LLM-based Search feature.
- Utilize ML to enhance Search's user query understanding and facilitate the triggering of relevant Search features.
- Build a Chain-of-Thought prompting model to evaluate value add of search results.

### Text Analysis in the Public Interest (TAPI) Lab

*Research Assistant*

Jan'18-Sep'19

*Chicago, IL*

- **First-authored** a paper on estimating brand perception using Twitter, achieving an 0.84 average AUC.
- Developed a social-based music recommender for Spotify, achieving a **0.77 AUC** and increase **40% correlation**.
- Researched online user behaviors: music taste shifts, filtering bubbles, and social perceptions.

### BMW Technology Corporation

*Machine Learning Research Intern*

Mar'19 - Aug'19

*Chicago, IL*

- Built a real-time energy consumption prediction model, improving current in-car reading methods by **80%**.
- Created a model to predict possible attainable destinations, given a car's gas level, with a **20%** error margin.
- Developed behaviors prediction model based on driver profiling to mitigate cold-start problem.

### Prof. Edward M. Reingold Lab

*Research Assistant*

Jan'18 - May'18

*Chicago, IL*

- Researched Fast Fourier Transform and its applications in computing.
- Generated musical blueprints for various genres using Short Time Fourier Transform.
- Developed a music genre conversion model, achieving 60% accuracy in genre classification with GTZAN Dataset.

## University of Chicago

Jun'17 - Sep'17

*Bioinformatics group - Lynx Project, Data Analysis & Software Engineer Intern*

*Chicago, IL*

- Developed a search engine optimized for efficient retrieval of identical human protein sequences.
- Integrated BLAST, a biological sequences comparison algorithm, for deeper sequences analysis and visualization.

## Illinois Institute of Technology

Aug'16 - May'18

*Teaching Assistant*

*Chicago, IL*

- Assisted students in Object Oriented Programming I + II (Java) and Data Structures & Algorithms (Python).
- Developed weekly review sessions and grade over 50 students' programming assignments per semester.
- Mentored 200+ Computer Science and Math sessions at Academic Resource Center.

## Craffinity - A Personalized Gifts Brand

Jun'17 - Dec'19

*Data Scientist / Software Engineer*

*Chicago, IL*

- Automated order processing pipeline for 10 Etsy stores, managing **50K** orders totaling **\$1.5M** in revenue.
- Created logging framework for real-time sales analysis, reducing **85%** Marketing cost

## PROJECTS

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### Social Network Analysis

- Conducted community detection and link prediction using Facebook-like data and Girvan-Newman algorithm.
- Clustered Facebook graph into communities and make friend recommendation.
- Built a sentimental classifier based on IMDB movie reviews.

### Spotify's Social Music Recommender

- Investigated the influence of friends and followers on users' music preferences using Spotify and Twitter.
- Built a next-song prediction model, achieving 0.77 AUC, a **40%** increase from Spotify's current recommender.

### Harmonizing (HackRice 6 winner)

- Created a crowdsourcing platform for musicians, facilitating collaborative contributions of vocals, harmonies, and instrumentals to produce socially blended songs. (Node.js, Express and Multer).

### Self-driving Mars Robotic Miner - NASA Robotic Mining Competition 2018:

- Created a neural obstacle detection system using Kinect depth cameras, LibFreenect, and OpenCV.
- Integrated LIDAR and capacitive touch sensors to develop a fully automated robot maneuvering system.

### Real-time Image and Video Style Transfer [[pdf](#)]

- Utilized Convolutional Neural Network (VGG16) to build an image style transfer model (Keras, Tensorflow).
- Improve model's speed by **3-fold** using perceptual losses and feed-forward network to transfer real-time video.

### Cloud-based prediction model for Competitive Gaming Match [[pdf](#)]

- Created a data pipeline to collect data from League of Legends Developer API to store on Azure Cosmos DB.
- Implemented a match prediction model on Apache Spark and serve on an interactive Javascript web application.

### Computer Graphics with WebGL and Javascript

- Implemented Phong illumination model, surface rendering, Bresenham line drawing and Cardinal splines interpolation.

## SKILLS

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**Languages** (Proficient) C++; Python; Java, C, Javascript, SQL, Haskell.

**Frameworks** Tensorflow, Keras, Hadoop, Scikit-learn, Pandas, NetworkX, OpenCV, WebGL, Flask.

## OTHER

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- **G'LAMS - Founder:** Produced and led the first Vietnamese-speaking student musical, which ran successfully for 9 years and reached over 12K audience members.
- **After War Photography Exhibition - Designer & Photographer:** Documentary of Vietnam War indirect victims.
- **Illinois Tech ACM - Chapter board:** Organized ScarletHacks 2017 - IIT's first Major League Hacking Hackathon.