

Himel Dev

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SUMMARY

I am an industry researcher with a strong academic background in **Applied Machine Learning** and **Statistical Modeling**. I have **10+ years of academic research experience**, designing novel methods and algorithms for discovering actionable insights from data. I also have **3+ years of industry research experience**, developing statistical and machine learning models for large-scale data in a variety of domains, such as social media, application logs, and financial transactions.

INDUSTRY EXPERIENCE

Snap Inc.

Applied Research Scientist, Decisioning and Insights

2021 – Current

Developed **large-scale user behavior models** for augmenting recommendation systems
Designed **inductive learning algorithms** for behavioral segmentation of 500M users
Devised **causal machine learning methods** for estimating long-term effects of features
Built **intelligent automation tools** for anomaly detection and root cause investigation
Deployed models improved the efficacy of recommendation captured via online metrics
Generated insights inform XFN stakeholders and drive high-stakes executive decisions

Snap Inc.

Research Intern, Data Insights and Governance

2019

Developed **statistical models** for studying adoption & diffusion of SNAPCHAT Lenses
Model achieved a **35% improvement** in predicting lens adoption **before release**
Research provided fresh insights that shaped Snap's Lens design and ranking strategies

Visa Inc.

Research Intern, Data Analytics

2018

Built a **deep learning workflow** for profiling US restaurants from VISA transactions
Workflow achieved a **49% improvement** in inferring restaurants' **latent categories**
Workflow incorporated into Visa's recommender system (patent, paper at IEEE DSAA)

Adobe Inc.

Research Intern, Creative Technologies Lab

2016

Designed a **pattern mining method** for extracting user tasks from PHOTOSHOP logs
Method achieved a **38% improvement** in identifying tasks **without supervision**
Method adopted by Adobe and Autodesk (paper at IEEE VIS, paper at ACM IUI)

Stochastic Logic Limited

Quantitative Researcher, Risk Management

2015

Designed an **eigenvector model** for estimating value at risk from stock market data
Model achieved a **40% improvement** in computation speed on **large-scale data**
Model incorporated into a portfolio optimization tool for company's decision makers

EDUCATION

University of Illinois at Urbana-Champaign (UIUC)

Ph.D. in Computer Science

2015 – 2021

Area: Data & Information Systems
Thesis: Modeling the Successes and Failures of Content-Based Platforms
Winner: **CSCW Honorable Mention** (5% out of 658 conference submissions)
GPA: 3.97 / 4.0 (Top 5% – eligible for Tau Beta Pi)

Bangladesh University of Engineering & Technology (BUET)

B.Sc. in Computer Science & Engineering

2009 – 2014

Area: Artificial Intelligence
Thesis: User Interaction Based Community Detection in Online Social Networks
Winner: **The Undergraduate Awards** (1% out of 4792 worldwide submissions)
GPA: 3.90 / 4.0 (Top 5% in a graduating class of 153 students)

TEACHING EXPERIENCE

University of Illinois at Urbana-Champaign (UIUC)

Teaching Assistant, Department of Computer Science

2015 – 2020

Conducted senior and graduate courses on Machine Learning, Introduction to Data Mining (4×), Theory and Practice of Data Cleaning, and Database Systems (3×)

Bangladesh University of Engineering & Technology (BUET)

Lecturer, Department of Computer Science & Engineering

2014 – 2015

Conducted undergraduate lab courses on Artificial Intelligence, Machine Learning, Pattern Recognition, Structured Programming Language, and Digital Logic Design

SKILLS

C/C++, Java, Python, R, SQL, Airflow, PHP, HTML, Prolog, ~~TeX~~

SELECTED PUBLICATIONS

- [C8] H. Dev, and H. Hamooni, “Profiling US Restaurants from Billions of Payment Card Transactions”. *The 7th IEEE International Conference on Data Science and Advanced Analytics (DSAA)*, 2020. [Acceptance Rate: 26%]
- [C7] H. Dev, K. Karahalios, and H. Sundaram, “Quantifying Voter Biases in Online Platforms: An Instrumental Variable Approach”. *The 22nd ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, 2019. [Acceptance Rate: 31%] ★ **Best Paper Honorable Mention**
- [C6] C. Geigle, H. Dev, H. Sundaram, and C. Zhai, “A Generative Model for Discovering Action-Based Roles and Community Role Compositions on Community Question Answering Platforms”. *The 13th AAAI Conference on Web and Social Media (ICWSM)*, 2019. [Acceptance Rate: 17%]
- [C5] D. Lee, H. Dev, H. Hu, H. Elmeleegy, and A. Parameswaran, “Avoiding Drill-Down Fallacies with VisPilot: Assisted Exploration of Data Subsets”. *The 24th ACM International Conference on Intelligent User Interfaces (IUI)*, 2019. [Acceptance Rate: 25%]
- [C4] H. Dev, C. Geigle, Q. Hu, J. Zheng, and H. Sundaram, “The Size Conundrum: Why Online Knowledge Markets Can Fail at Scale”. *The 27th International Conference on World Wide Web (WWW)*, 2018. [Acceptance Rate: 15%]
- [C3] H. Dev, and Z. Liu, “Identifying Frequent User Tasks from Application Logs”. *The 22nd ACM International Conference on Intelligent User Interfaces (IUI)*, 2017. [Acceptance Rate: 23%]
- [C2] H. Dev, M.E. Ali, J. Mahmud, T. Sen, M. Basak, and R. Paul, “A Real-Time Crowd-Powered Testbed for Content Assessment of Potential Social Media Posts”. *The 7th International Conference on Social Informatics (SocInfo)*, 2015. [Acceptance Rate: 42%]
- [C1] H. Dev, M.E. Ali and T. Hashem, “User Interaction Based Community Detection in Online Social Networks”, *The 19th International Conference on Database Systems for Advanced Applications (DASFAA)*, 2014. [Acceptance Rate: 24%]

PATENT

H. Hamooni, H. Dev, US 11334892 B2, “System, Method, and Computer Program Product to Determine Cuisine Type Classifiers”.

HONORS & AWARDS

Member, MENSA	2023
Top 2% of the general population on an accepted standardized intelligence test	
Craftsmanship Award, Snap Hackathon	2021
Developed a time series anomaly detection tool that outperformed Prophet (Meta open-source)	
Best Paper Honorable Mention, ACM CSCW	2019
Top 5% of the accepted full papers received honorable mention in CSCW 2019	
Finalist, Research Live!	2015
3 minute research competition for graduate students at UIUC (12 out of 65 participants)	
National ICT Achievement Award	2015
Prestigious recognition in ICT by the Government of the People’s Republic of Bangladesh	
International Winner, The Undergraduate Awards	2014
World’s largest academic awards program patronized by the President of Ireland	
Invited Young Researcher, Heidelberg Laureate Forum	2014
Prestigious meeting with the Abel, Fields and Turing laureates (~10% acceptance rate)	
ACM SIGMOD Undergraduate Award	2014
Undergraduate students who played a key role in a research project (7 out of 22 submissions)	
Finalist, ACM Student Research Competition (SRC) at SIGCHI	2014
SRC is a competitive forum for undergraduate & graduate students to present original research	
Runner-up to Best Paper Award, MoHCI	2014
MoHCI is a research workshop with a competitive review process (2 nd out of 29 submissions)	
Dean’s List & University Merit Scholarship	2009 – 2014
Recognition of excellent academic performance at CSE, BUET (Top 5% in graduating class)	

SYNERGISTIC ACTIVITIES

Journal: ACM TiiS, ACM TSAS
Conference: AAAI, KDD, ECML-PKDD, WWW, WSDM, ICWSM, WebSci, CHI, CSCW, IUI