Tanjila Ahmed, Ph.D

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- *10 years of research and industry experience in Networks such as Backbone, Datacenter, and IoT networks. Published papers in top journals and conferences on this field.*
- *5 years of industry experience in Machine Learning, Generative AI & Data Science.*
- *Proven record of research skills through mentionable number of prestigious awards, fellowships, and publications.*

Experience

Lead Member of Technical Staff ***Jan 2022 – Present***

AT&T Labs, Team: Network Automation and Analytics San Ramon, CA

- Built a multimodal RAG based image analyzer for network component installation error detection to reduce number of dispatch incurring cost. Used GPT-4o, LLMs, RAG, and few shot learning.
- Developed analytical model to predict impact of network metric (Rx signal threshold) changes on technician dispatch. AT&T operation team uses this model to determine optimal network threshold and avoid cost of dispatch.
- Developed fiber access network congestion avoidance strategies. Based on network access traffic data recommended optimal utilization threshold to proactively move high usage subscribers to a non-busy PON.
- Developed fiber transport network congestion avoidance strategies. Using network traffic data from subscriber, access, backhaul, and midhaul levels, recommended congestion thresholds to traffic monitoring teams at different network aggregation levels.
- Worked with AT&T fiber network clients to capture requirements and translate to software specific parameter and logic changes.
- Managed budget of an entire AVP organization of 90+ employees contractors and 60 projects.

Student Intern ***Summer 2019***

AT&T Labs, Team: Network Infrastructure and Services San Ramon, CA

- Utilized Computer Vision/ML to automate the translation of client requests (network images) to AT&T standard offered services.

Student Intern ***Summer 2018***

Honeywell Inc., Team: Artificial Intelligence Team Morristown, NJ

- Used ML techniques to built a chatbot with cognitive search capabilities through product documentations and images in addition to provide product recommendation (collaborative filtering from order history) to leverage upsell.

Graduate Research Assistant ***Sept 2015 – June 2021***

University of California, Davis, Networks Lab Davis, CA

- Built an application aware internet traffic classifier using semi-supervised ML techniques.
- "C+L bands upgrade strategies to sustain traffic growth in backbone networks," in IEEE/OSA Journal of Optical Communications and Networking (JOCN), vol. 13, no. 7, pp. 193-203, July 2021.
- "Dynamic routing, spectrum, and modulation-format allocation in mixed-grid optical networks," in IEEE/OSA Journal of Optical Communications and Networking (JOCN), vol. 12, no. 5, pp. 79-88, May 2020.
- "A survey on high-precision time-synchronization techniques for optical datacenter networks and a zero-overhead microsecond-accuracy solution," Photonic Network Communications, vol. 36, no. 1, pp. 56–67, May, 2018.
- Teaching assistant and Lab instructor for multiple electrical and computer engg courses with class size of 120+.

Graduate Research Assistant ***Sept 2013 – Dec 2015***

Texas Sustainable Energy Research Institute, University of Texas San Antonio San Antonio, Texas

- Built a connected homes prototype using IoT technology. An analysis on relationship between real-time network delay and network intrusion was also done.
- Teaching assistant and Lab instructor for multiple electrical and computer engg courses with class size of 120+.

Education

Ph.D in Electrical and Computer Engineering ***2015-2021***

University of California Davis (GPA: 3.71 / 4.00) Davis, CA

Master in Electrical and Computer Engineering ***2013-2015***

University of Texas San Antonio (GPA: 3.76 / 4.00) San Antonio, Texas

Bachelor of Science in Electrical and Computer Engineering ***2006-2010***

Military Institute of Science and Technology (GPA: 3.74 / 4.00) Dhaka, Bangladesh

Skills

Programming Languages: Python (Most Proficient), Java, C/C++, SQL
Tools and Frameworks: LLM, Langchain, WireShark, TensorFlow, PyTorch, MATLab
Soft Skills: Strong Interpersonal and leadership skill, Collaboration, Fast learner, Team player, Business knowledge

Accomplishments

Best Paper Award by IEEE Int. Conference on Advanced Networks and Telecom Systems, 2019.
Student scholar rewarded by CRA-W Grad Cohort for Women, 2018 & 2019
Grace Hopper Scholar Award in 2017
Grace Hopper Poster presenter in 2018
Departmental Fellowship by UC Davis, 2015-2016
Departmental Fellowship by UTSA, 2013-2014
Valero Research Scholar by Valero Energy Corporation, Texas, 2013-2014