

# HESSAM MOEINI

Principal Inventive Scientist, AT&T Labs - Network Analytics and Automation

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## PROFESSIONAL BACKGROUND

### Principal Inventive Scientist

AT&T Labs - Network Analytics and Automation

📅 January 2022 – Present

📍 Dallas, Texas - AT&T Innovation Studio

- Lead Inventive Scientist January 2024 – June 2024
- Senior Inventive Scientist January 2022 – December 2023

#### Key Projects and Achievements:

- **Quality of Experience (QoE) Management and Traffic Optimization:**
  - Designed and evaluated solutions to measure and improve user **QoE** in different applications like video streaming, AR/VR, and online gaming.
  - Engineered and assessed different innovative solutions leveraging advanced technologies such as Radio Resource Partitioning (**RRP**), 5G Network **Slicing**, Quality on Demand (**QoD**), and Low Latency, Low Loss, Scalable Throughput (**L4S**) to enhance network performance.
  - Developed frameworks for **scalable real-life network traffic generation**, enabling robust testing and optimization.
- **Network APIs and Standards:**
  - Managed lab operations and contributed to the development and demonstration of three different **TMForum Catalysts** of Private Optimized Connectivity (**POC**), Network Insights for Customer Experience (**NICE**), and award-winner catalyst of Simple Hyperscaler Integrated Network Experience (**SHINE**) at DTW23-Ignite to advance interoperability and standards in telecom networks. [more info [here](#)]
  - Contributed to a Broadband **Anomaly Detection API** PoC which collects real-time user data and detects anomalies to address security issues.
- **Next-Generation Network Innovations:**
  - Led evaluation studies in 5G SA **network traffic classification** and **rApp** solutions to help performance monitoring in Open RAN ecosystems.
  - Collaborated on Citizens Broadband Radio Service (**CBRS**) and private 5G network project to evaluate and enhance spectrum sharing and utilization.
  - Filed multiple patents focused on enhancing network performance, automation, and analytics.

### Postdoctoral Research Associate

University of Illinois at Urbana-Champaign, MONET Research Group

📅 November 2019 – December 2021 📍 Urbana, Illinois

- Developed **ProvLet**, a provenance management service for long-tail microscopy data at diverse scales and types. This system introduced data, network, and IoT sensory data provenance as part of transformative cyberinfrastructure for ultra-clean scientific laboratories [[video](#)].
- Featured in the [October](#) edition of Open Access Government (pg. 248).

### Graduate Research Assistant and Lecturer

University of Texas at Dallas

📅 August 2014 – November 2019

📍 Dallas, Texas

- Designed and developed distributed planning algorithms to enable efficient IoT **service composition**.
- Introduced an IoT service ontology and specification to build effective semantic-based **service discovery** protocols for IoT-Edge-Cloud systems.
- Taught *Discrete Mathematics for Computing* (Spring 2018, Spring 2019).

### IoT and Industry 4.0 Engineer Intern

Stanley Black and Decker

📅 June 2018 – January 2019

📍 Atlanta, Georgia

- Architected and built Stanley's **Smart Manufacturing Proving Ground** that enabled and demonstrated Industry 4.0 implementation in smart plants.

+ 4 more years of experience working as **Software Analyst and Designer** as well as **Network Security Engineer**.

## EDUCATION

### Ph.D. in Computer Science

University of Texas at Dallas

📅 August 2014 – November 2019

Dissertation: Semantic and Logic-Based Routing Algorithms for Service Discovery and Composition in Dynamic IoT-Edge Networks

### M.Sc. in Computer Science

University of Texas at Dallas

📅 August 2017 – December 2018

### M.Sc. in IT Engineering

Sharif University of Technology

📅 September 2011 – July 2013

### B.Sc. in IT Engineering

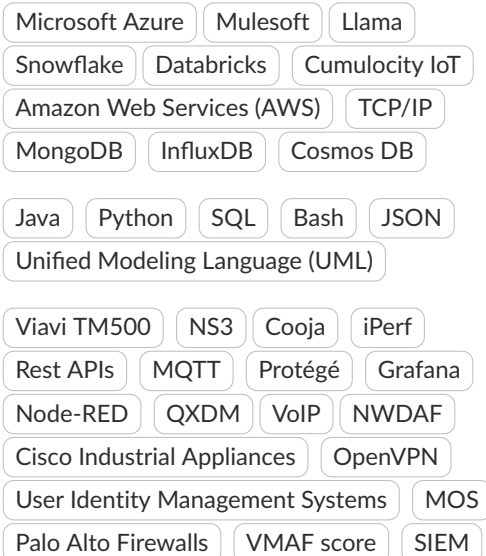
Amirkabir University of Technology

📅 September 2006 – September 2010

## INTERESTS

Network Optimization, Cloud and Edge Computing, Data Science, AI and Machine Learning, IoT and Cyber-Physical Systems, 5G/6G and Wireless, Security and Privacy, Quantum Computing

## KNOWLEDGE and SKILLS



## SELECTED PUBLICATIONS

Hessam Moeini, et al.:

1. ProvLet: A Provenance Management Service for Long Tail Microscopy Data, *arXiv*, 2021.
2. Decentralized Service Discovery and Composition in Dynamic IoT Systems, *ICPADS*, 2021.
3. Service Specification and Discovery in IoT Networks, *ICWS*, 2019.

Full list: [Google Scholar](#).