

# Azzam Alsudais

<https://faculty.ksu.edu.sa/azalsudais>  
azalsudais@ksu.edu.sa

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## BACKGROUND

Azzam Alsudais has over eight years of professional experience in the field of information and communication technologies (ICT), demonstrating a keen ability to lead and manage technical teams to effectively drive digital transformation. Azzam's primary objective is to build and lead high-performing teams that are capable of delivering business outcomes by adhering to industry best practices.

## EXPERIENCE

**Deputy CIO and Consultant** Aug 2021 – Present

*King Saud University, Deanship of E-Transaction and Communication* KSA

*Role:* Overseeing the development team for electronic and web services, as well as overseeing the project management office (PMO) for all IT projects at KSU. The position also involves building and executing digital transformation strategies and aligning them with KSU's strategic objectives, in addition to taking part in several university-wide committees.

*Skills:* Business continuity · Analytical skills · Budgeting · Technology advisory · Design thinking · Business analysis · IT management · Digital transformation · IT strategy · Project management · IT investment management · Conflict resolution · Government contracting · IT governance · Business intelligence (BI) · Team leadership

**Assistant Professor** Mar 2021 – Present

*King Saud University, Department of Computer Science* KSA

*Research interests:* cloud and edge computing, networked and distributed systems, virtualization, 5G, IoT, datacenters, and emerging technologies.

*Skills:* Scientific research · Teaching · Thesis and project supervision · Paper and article reviewing · Course preparation

**Project and Research Lead** May 2017 – Dec 2020

*AT&T Labs Research, Cloud QoS Team* USA

*Role:* Led a team of other researchers and worked closely with the Cloud QoS team on various production-level projects including: scalable cloud management with OpenStack, efficient network functions virtualization (NFV), and open network automation platform (ONAP).

*Skills:* Analytical and critical thinking · Problem formulation · Technology advisory

**IT Consultant** May 2015 – Aug 2015

*Takaful Charity Foundation, IT Department* KSA

*Role:* Consulted on a number of projects, and helped the IT department design and implement a mobile application for the organization staff. The application visualizes statistics about the organization's progress on various projects, enabling staff to track performance metrics more effectively.

*Skills:* Business continuity · Analytical skills · Technology advisory · Consulting · Design thinking · Business analysis · IT management · IT strategy · Team building · Business intelligence (BI) · KPI dashboards

**Researcher/Business Developer** May 2015 – Aug 2015

*Center of Excellence in Information Assurance (CoEIA), KSU* KSA

*Role:* Designed and developed a comprehensive security awareness training course for public sector and government employees.

*Skills:* Analytical skills · Cybersecurity · Training · Technology advisory · Consulting · Design thinking · Business analysis

## EDUCATION

**Ph.D.** in Computer Science, *University of Colorado Boulder*, USA 2020

- Advisor: Eric Keller
- Dissertation title: *Efficient Approaches for Homing Complex Network Services*

**M.Sc.** in Computer Science, *University of Colorado Boulder*, USA 2015

**B.Sc.** with honors in Computer Science, *King Saud University*, KSA 2011

# CERTIFICATION

Prosci® Certified Change Practitioner

2022

# SKILLS

**Management and Strategy:** Team leadership — Digital transformation strategy and planning — Strategy execution — Change management — Conflict resolution — Project management — Business continuity — Problem formulation

**Technical:** Customer experience design — Development and operation of e-services — Cloud-based service design and delivery — Cloud and datacenter technologies — Network design and operation

# AWARDS

Digital Transformation Excellence (Rewarded to supervised team at KSU)	Nintex - 2022
Early Career Professional Development Fellowship Award	CU Boulder – 2016
Winner team at CAIDA’s first BGP Hackathon	CAIDA – 2016
Full educational and research scholarship	KSU – 2012-2020

# RESEARCH PROJECTS

## Scalable OpenStack for Edge Computing (work done with AT&T)

We have designed an efficient messaging service for OpenStack, the widely-used cloud management system. Our approach was built around peer-to-peer technology that allows compute nodes to disseminate messages among one another.

- o **Role:** Team Lead                      **Team size:** 5
- o **Practical outcomes:** solution is being integrated into AT&T cloud solutions.
- o **Technologies used:** OpenStack, HashiCorp Serf, Apache Cassandra

## Efficient NFV Management on ONAP (work done with AT&T)

Using the top NFV automation platform (ONAP), we designed an efficient and scalable optimization engine for its placement service. In this project, we analyzed production logs of the NFV placement service that runs on top of AT&T’s global network, and we proposed a new approach to make the placement process more efficient and optimized.

- o **Role:** Team Lead                      **Team size:** 5
- o **Practical outcomes:** solution is being integrated into AT&T’s network platform.
- o **Technologies used:** ONAP, Docker, Prometheus, Jenkins, Apache Cassandra

## Stateless Network Functions

With the goal of improving NFV’s adherence to SLAs, we proposed a new design for virtual network functions (VNFs: firewalls, loadbalancers, etc). In this project, we re- designed VNFs around efficient packet and I/O processing pipelines to make them more scalable, efficient, and resilient for cloud and telco systems with zero downtime.

- o **Role:** researcher assistant                      **Team size:** 4
- o **Practical outcomes:** solution has been deployed by a cloud connectivity company.
- o **Technologies used:** Docker, Intel DPDK, RAMCloud

## PUBLICATIONS

### **StepNet: A Compositional Framework with Reduced Querying for Homing Complex Network Services**

**Azzam Alsudais**, Shankaranarayanan Puzhavakath Narayanan, Bharath Balasubramanian, Zhe Huang, and Eric Keller. *In Proceedings of The IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'21)*.

### **Efficient Approaches for Homing Complex Network Services**

**Azzam Alsudais**. *In The PQDT-Global, University of Colorado Boulder*.

### **FOCUS: Scalable Search Over Highly Dynamic Geo-distributed State**

**Azzam Alsudais**, Mohammad Hashemi, Zhe Huang, Bharath Balasubramanian, Shankaranarayanan Puzhavakath Narayanan, Eric Keller and Kaustubh Joshi. *In Proceedings of The 39th IEEE International Conference on Distributed Computing Systems (IEEE ICDCS'19)*.

### **NodeFinder: Scalable Search over Highly Dynamic Geo-distributed State**

**Azzam Alsudais**, Zhe Huang, Bharath Balasubramanian, Shankaranarayanan Puzhavakath Narayanan, Eric Keller, and Kaustubh Joshi. *In Proceedings of The 10th USENIX Workshop on Hot Topics in Cloud Computing (USENIX HotCloud'18)*.

### **Hey Network, Can You Understand Me?**

**Azzam Alsudais** and Eric Keller. *In Proceedings of The IEEE INFOCOM Workshop on Software-Driven Flexible and Agile Networking (IEEE INFOCOM SWFAN'17)*.

### **Stateless Network Functions: Breaking the Tight Coupling of State and Processing**

Murad Kablan, **Azzam Alsudais**, Eric Keller, and Franck Le. *In Proceedings of The USENIX Symposium on Network Systems Design and Implementation (USENIX NSDI'17)*