BINH NGUYEN

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SUMMARY

I am passionate about networked systems that solve problems at scale. I am experienced in Mobile (LTE/EPC) core networks, Software-defined networking, and Network Automation.

WORK EXPERIENCE

Charter Communications - Advanced Engineering

• Design and build production systems to automate network management tasks to support core-backbone network operations teams.

Microsoft Research

• Proposed and POC a distributed NFV-based mobile core architecture that offers 99.999% availability SLA in hyper-scale public clouds.

Nokia Bell Labs

• Proposed and POC a low-overhead NFV-based mobile edge cloud architecture that supports a large number of IoT devices.

AT&T Labs Research

• Designed and POC a monitoring system that detects silent (grey) failures in country-scale mobile networks.

Flux Research Group University of Utah

- PhantomNet testbed (now mereged to POWDER city-scale wireless testbed in Salt Lake City).
- Research topics on Mobile Network, Software-defined Networking, Distributed systems, and Network Routing.

TECHNICAL SKILLS

ITTE motoroul	LTE stack (NadeD and EDC core). Software Defined Dadie
LIE network	LIE stack (enoded and EFC core), Software Defined Radio
Data analytics	Hadoop, Pig, ELK, Kafka, Avro.
Infrastructure tools	Kubernetes, Helm, Docker.
Computer Languages	Python, C, Bash.
Software-defined network (SDN)	Ryu controller, Open Daylight, Open vSwitch, ONOS.
Network tools	NS3, Mininet, Emulab, PhantomNet, Free Range Routing.
Network protocols	TCP, OSPF, Segment Routing, Netconf, SNMP.
Others	Protobuf, YANG, Openconfig, Microsoft Azure.

EDUCATION

University of Utah, PhD in Computer Science	08/2012 - 12/2017
Ph.D. dissertation: "Enhancing scalability and reliablility in mobile core networks".	
Shanghai Jiao Tong University, BS in Computer Engineering	08/2008 - 05/2012
PATENTS/PENDING PATENTS	

Telecommunications network with data centre deployment. US, 15406348. 7/19/2018.

Programmable system architecture for routing data packets in virtual base stations. US, 15068953, 9/14/2017. AWARDS

NSF travel grant for Mobicom 2015, Paris, France.

Scholarship to studying aboard for excellent students granted by Vietnam Ministry of Education in 2007.

Excellent undergraduate student scholarship by Shanghai Municipal Government in 2009 & 2010 & 2011.

Research Intern, 05-08/2015

Research Intern, 05-08/2016

Principal Engineer, 1/2018-now

Research Intern, 05-08/2014

Research Assistant, 01/2013-12/2017

PUBLICATIONS

- ENHANCING SCALABILITY AND RELIABILITY IN MOBILE CORE NETWORKS. PH.D. Dissertation. 2018.
- ECHO: A reliable distributed mobile core network for public clouds. Mobicom 2018.
- SIMECA: SDN-based IoT Mobile Edge Cloud Architecture. IEEE IM, 2017 (Demo at AT&T Research Academic Summit, 2016).
- ABSENCE: Usage-based Failure Detection in Mobile Networks. Mobicom, 2015.
- PhantomNet: Research Infrastructure for Mobile Networking, Cloud Computing and Software-Defined Networking. ACM GetMobile, 2015. (Won **Best Demo award**, Mobicom, 2016).
- Efficient, Adaptive and Scalable Device Activation for M2M Communications. IEEE SECON 2015.
- Towards Understanding TCP Performance on LTE/EPC Mobile Networks. AllthingsCellular, 2014.
- SMORE: Software-Defined Networking Mobile Offloading Architecture. AllthingsCellular, 2014.

COMMUNITY INVOLVEMENT

Reviewer for 2014 IEEE/ACM Transactions On Networking (ToN).

Volunteer for 2017 ACM Mobicom conference, Snowbird, UT.