BINH NGUYEN

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SUMMARY

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

WORK EXPERIENCE

Charter Communications - Advanced Engineering **Principal Engineer, 1/2018-now**

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

Microsoft Research **Research Intern, 05-08/2016**

- Proposed and built a distributed architecture (ECHO, in Microsoft Azure) that enhances scalability and availability of software-based LTE/EPC mobile networks running in hyper-scale public clouds.

Nokia Bell Labs **Research Intern, 05-08/2015**

- Proposed and built a light-weight SDN/NFV-based mobile edge cloud architecture (SIMECA) that supports a massive number of IoT devices.

AT&T Labs Research **Research Intern, 05-08/2014**

- Designed and built a monitoring system (ABSENCE) that detects silent failures in country-scale mobile networks.

Flux Research Group University of Utah **Research Assistant, 01/2013-12/2017**

- Helped deliver the PhantomNet testbed (now is the POWDER city-scale wireless testbed in Salt Lake City).
- Done various research projects and hands-on system building on topics including Mobile Network, Software-defined Networking, Distributed systems, and Network Routing.

University of Utah **Teaching Assistant, 08/2012 - 12/2012**

- Course: Computer Architecture (CS3810).

TECHNICAL SKILLS

LTE network	LTE stack (eNodeB and EPC core), Software Defined Radio.
Data analytics	Hadoop, Pig, ELK stack, Kafka, Avro.
Infrastructure tools	Kubernetes, Docker containers.
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, SNMP.
Others	Protobuf, YANG, 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.

1st Prize High School Physics competition (region level) in 2005 & 2006.

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.

LANGUAGES

Proficient English, Chinese, and Vietnamese (native). Both speaking and writing.

COMMUNITY INVOLVEMENT

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

Volunteer for 2017 ACM Mobicom conference, Snowbird, UT.