NODIR KODIROV

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EDUCATION

University of British Columbia   September 2013 - Present
Ph.D. in Computer Science   *Vancouver, BC, Canada*

I am broadly interested in Systems research. Recently, I have been focusing on datacenter resource scheduling challenges, in particular for networked cloud applications. I have also done some work on constraint solvers and Virtual Network Functions.

Konkuk University   September 2008 - August 2010
M.Sc. in Computer Science & Engineering   *Seoul, Republic of Korea*

Thesis: Enhancing eCos with EDF Scheduling and Lock-Free Buffer
Thesis advisor: Doo-Hyun Kim

Tashkent University of Information Technologies   September 2004 - June 2008
Bachelor in Information & Communication   *Tashkent, Uzbekistan*

Thesis: Organization of Working with Confidential Information in Electronic Document Exchange
Thesis advisor: Rustam Khamdamov

WORK EXPERIENCE

ZeroStack Inc.   May 2015 - November 2016
MTS Intern, MTS Consulting Engineer   *Mountain View, CA, USA*

I did two summer internships and consulting when I am not interning. I started by evaluating different network setups in OpenStack Neutron and fine-tuned it for higher cloud application performance. Then I widened my focus to include storage, ultimately to improve enterprise workload performance. It included evaluating and improving performance of several enterprise applications, such as Hadoop, Memcache, Redis, MySQL and Jenkins. I developed OpenStack's Cinder scheduler, which made locality-aware volume placement.

Electronics and Telecommunications Research Institute   September 2010 - July 2013
Member of Engineering Staff   *Daejeon, Republic of Korea*

Cloud Data Center Networking project (March 2012 - July 2013)

I worked on a project to automate virtual machine networking setup. I contributed to the development of Edge Control Protocol (ECP), and Virtual Station Interface Discovery and Configuration Protocol (VDP) on ZebOS Network Platform. These protocols are based on IEEE 801.1Qbg standard.

Cloud Computing Management project (September 2010 - March 2012)

I mostly evaluated cloud management frameworks, such as OpenStack, OpenNebula, and Eucalyptus.

RESEARCH EXPERIENCE

Graduate Teaching and Research Assistant   September 2013 - Present
Systopia Lab   *University of British Columbia*

I was a TA for following courses at UBC, CPSC 210: Software Construction, CPSC 317: Internet Computing, and CPSC 416: Distributed Systems. I am/was also a research assistantship for many lab projects, some of which ended up getting published.

Research Assistant   September 2008 - August 2010
Embedded Computing Lab   *Konkuk University*

I developed a resource scheduling algorithm for the Real-time Operating System (Embedded Configurable OS) kernel, which was used at the unmanned helicopter. This work later became part of my masters thesis, and got published in a conference and a journal (the extended version).

Research Assistant   March 2008 - May 2008
Department of Applied Mathematics and Informatics   *Moscow State University, Tashkent branch*

I designed and implemented secure document exchange system using custom cryptographic algorithm (Private Box Algorithm). This work became part of my undergraduate thesis.

Research Assistant   January 2007 - February 2008
Department of Information Technologies   *Tashkent University of Information Technologies*

I designed and implemented new encryption algorithm: Private Box Algorithm. I also deployed various security tools on department LAN, including public/private key infrastructure, and firewall.

AWARDS & HONOURS

Four Year Doctoral Fellowship   September 2014 - September 2019
for International PhD students   *by University of British Columbia, Canada*

Korean Government IT Scholarship   September 2008 - August 2010
for International Graduate Students   *by Institute for Information Technology Advancement, Korea*

Beruni Scholarship for Outstanding Student in Information Tech.   Nov. 2007 - June 2008
in Science & Technology   *by Ministry of Higher & Secondary Education, Uzbekistan*

Runner-up for the Presidential Award   November 2007
in Information Technologies   *by Ministry of Higher & Secondary Education, Uzbekistan*

Scholarship for Fully-funded Undergraduate Study   September 2004 - June 2008
merit-based; uses ranking in the national entrance examination   *by Uzbekistan government*

SELECTED PUBLICATIONS

See longer version in my Google Scholar profile and even longer in knodir.github.io/publications.

- Parking Packet Payload with P4, Swati Goswami, **Nodir Kodirov**, Craig Mustard, Ivan Beschastnikh, Margo Seltzer, The 16th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), 2020.

- VNF Chain Allocation and Management at Data Center Scale, **Nodir Kodirov**, Sam Bayless, Fabian Ruffy, Ivan Beschastnikh, Holger H. Hoos, Alan J. Hu. The 14th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS), 2018.

- Scalable Constraint-Based Virtual Data Center Allocation, Sam Bayless, **Nodir Kodirov**, Ivan Beschastnikh, Holger H. Hoos, Alan J. Hu. International Joint Conference on Artificial Intelligence (IJCAI'17), 2017.

PRESENTATIONS AND TALKS

VNF Chain Allocation and Management at Data Center Scale
August 23, 2019 at **MSRA** (Microsoft Research Asia), August 22, 2018 at **UWaterloo**; July 25, 2018 at **CMU**; July 23, 2018 at **ANCS'18**.