

Shakir James, Ph.D.

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Professional Profile

A Ph.D. technical leader with over 20 years of experience in computer networking, network security, and full-stack web app development. Diverse background in hardware, platforms, software, and services.

Leadership Skills

- Cleaned house for tech team and business ops to talk: replaced 90% of the team.
- Moved to a serverless architecture: reduced infrastructure costs by six times.
- Changed the agile dev process: reduced deployment interval from weeks to hours.
- Broke up the department into smaller teams: scaled the tech team by five times.

Research Skills

- Designed and implement in-memory data structures to speed up query execution: compared to SQL, faster by 190 times.
- Showed experimentally with hundreds of machines in a data center that previous claims about the performance of peer-to-peer (P2P) applications are misleading.
- Developed P2P protocols for high-performance server deployments and updates in data centers; reduced data distribution times on data centers by 41 times.
- Designed, implemented, and evaluated a P2P network architecture including a network device and application server; reduced costly Internet traffic by 40 times.
- Developed an API for adding functionality to a programmable router, including core plugins for forwarding, counting, and filtering packets.

- Extensive experience in performance evaluation including experimental design.
- Proficiency in a range of programming languages: VHDL, assembly, C/C++, Python, Bash, PHP, and JavaScript.

Education

2009–2012	Ph.D. Computer Engineering , Washington University, St. Louis, MO
2006–2009	M.S. Computer Engineering , Washington University, St. Louis, MO
2002–2005	B.S. Computer Science and Mathematics , Midwestern State University, Wichita Falls, TX

Experience

2018–present	Adjunct Professor , University of the District of Columbia. Teach web development and network security.
2017–present	CTO , DTI Management. Clean house in the engineering department for a \$300 million-a-year enterprise: reaching the breakeven point.
2017–present	CTO , 1Ticket.com. Scale dev team by five times in five months and increase revenue by 48% in one year.
2017–present	Software Engineer , 1Ticket.com. Migrate to a serverless, microservice architecture on AWS platform.
2016–present	CEO , Inktie, Inc. Build an online platform for small newspapers to increase online revenue by sharing content.
2017–2018	Visiting Assistant Professor , University of the District of Columbia. Taught web development, network security, and cloud computing.
2014–2017	Assistant Professor , University of the District of Columbia. Taught advanced web development, network security, cryptography, security in cloud computing, and scalable cloud computing.
2012–2014	Senior R&D Engineer . Designed and developed algorithms and data structures to that detect anomalous behavior of millions of devices.
2009–2012	Ph.D. Thesis . "Network Efficiency in Peer-to-peer Data Distribution."
2009–2012	Teaching Assistant , Washington University. Lectured in graduate

and undergraduate courses in computer architecture and system software.

- 2008 **Technical Intern**, Intel Corporation. Developed novel methods and tools for IO-performance analysis of enterprise applications.
- 2007–2012 **Research Assistant**, Washington University. Characterized the network performance of peer-to-peer applications and prototyped novel systems to improve it.
- 2007–2012 **Research Associate**, Washington University. As a member of the Applied Research Lab (ARL), developed application frameworks for a remotely accessible networking laboratory.
- 2005–2006 **Programmer**, New Media Gateway. Designed and implemented web application frameworks including a scalable, statistics package.
- 2004 **Developer Intern**, Sheppard Air Force Base. Designed and developed an index of digital course materials for pilot training.
- 2003, 2004 **Lab Assistant**, Midwestern State University. Provided technical support for students in the Computer Labs.
- 2002 **Teacher**, Dominica Grammar School, Dominica, West Indies. Taught secondary school mathematics.
- 2001, 2002 **Web Developer**, FreeStyle Inc. Led a web development team.
- 2001–2015 **Webmaster**, Build an online content management system for small online newspapers.

Awards

- 2006–2011 Chancellor’s Graduate Fellowship, Washington University in St. Louis
- 2008 Goodie Drawer Award (for timely and relevant analyses), Intel
- 2005, 2006 Problem Solver Award, New Media Gateway Inc.
- 2005 President’s Medal, Midwestern State University
- 2005 Honors Program Graduate, Midwestern State University
- 2005 Outstanding Computer Science Student, Midwestern State University
- 2005 Outstanding Mathematics Student, Midwestern State University

Service

2017	Member, SEAS College Promotion Committee, UDC
2017	Chair of Departmental Evaluation and Promotion Committee, UDC
2017	Member of Scholarship Committee, UDC
2014–2017	Member of CSIT Graduate Admissions Committee, UDC
2014–2017	Member of Undergraduate Curriculum Committee, UDC
2016	Speaker, Caribbean Students Organization, MSU
2016	Distinguished Guest, MSU Commencement
2016	Speaker, Chancellor's Fellowship Conference, and Reunion, WashU
2016	Panelist, ATARC Federal Cloud Computing Summit
2015	Organizer, Department of Homeland Security CMSI-UDC event
2015	Advisor, NSF LSAMP program, Bradley Erickson
2014–2015	Advisor, M.S. Thesis/Project, Sophia Anderson
2013	Speaker, Future Faculty Career Exploration Program, RIT
2012	Reviewer, IEEE/ACM Transactions on Networking (ToN)
2010, 2011	Chaperon, Target Hope conference for underrepresented minorities
2011	Speaker, Technical Research Exhibition, 37th NSBE convention
2011	Presenter, Technical Research Exhibition, 37th NSBE convention
2011	Speaker, Chancellor's Fellowship Dinner, WashU
2011	Reviewer, IEEE Networking and Internet Symposium (ICC 2011)
2006–2010	Web Site Administrator, Chancellor's Fellowship, WashU
2010	Presenter, Target Hope Conference, WashU
2010	Cook, Feed St. Louis, Centenary Cares
2009	Presenter, Graduate Research Symposium, WashU
2008–2009	President, Graduate Student Association, WashU

2008	Founding Member, WashU Technology Entrepreneurs
2008	Judge, Graduate Research Symposium, WashU
2008	Speaker, Ph.D. Visitor's Day, WashU
2008	Panelist, Graduate Panel, National Society of Black Engineers' (NSBE)
2007, 2008	Vice President, Graduate Student Association, WashU
2007	Speaker, Chancellor's Fellowship Recruitment, WashU
2005	Public Relations Officer, Math Club, MSU

Memberships

2014–present	Association for Computing Machinery (ACM)
2008–2016	National Society of Black Engineers (NSBE)

Publications

Shakir James and Patrick Crowley. [Experimental Analyses of Data Distribution on Data Center Networks](#). In Proceedings of the 2013 IEEE Thirteenth International Conference on Peer-to-Peer Computing (P2P), Trento, Italy, Sep 2013 (19% acceptance rate, 18/94).

Shakir James and Patrick Crowley. [Fast Content Distribution on Datacenter Networks](#). In Proceedings of the 7th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS '11), Brooklyn, NY, Oct 2011 (18% acceptance rate, 31/172).

Shakir James. Network Efficiency in Peer-to-peer Data Distribution. Washington University in St. Louis, Ph.D. Dissertation, 2012.

Shakir James and Patrick Crowley. [IMP: ISP-Managed P2P](#). In Proceedings of the 2010 IEEE International Conference on Peer-to-Peer Computing (P2P), Delft, Netherlands, Aug 2010 (22% acceptance rate, 27/121).

Shakir James and Patrick Crowley. [TnT: transparent network tracker for P2P applications](#). In Proceedings of the 6th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS '10), La Jolla, CA, Oct 2010 (18% acceptance rate, 32/178).

Shakir James and Patrick Crowley. [ISP managed peer-to-peer](#). In Proceedings of the 5th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS '09), Princeton, NJ, Oct 2009 (21% acceptance rate, 32/150).

Charlie Wiseman, Jonathan Turner, Michela Becchi, Patrick Crowley, John DeHart, Mart Haitjema, **Shakir James**, Fred Kuhns, Jing Lu, Jyoti Parwatikar, Ritun Patney, Michael Wilson, Kenneth Wong, and Dave Zar. [A Remotely Accessible Network Processor-Based Router for Network Experimentation](#). In Proceedings of the 4th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS '08), San Jose, CA, Nov 2008 (23% acceptance rate, 30/131).

Shakir James. Performance Evaluation of the Advanced Network Tracker for BitTorrent, Computer Science Department, Washington University in St. Louis, 2008.

Shakir James. OSPF Extensions for Mobile Ad-hoc Networks, Computer Science Department, Washington University in St. Louis, 2008.

Shakir James. Web single sign-on systems, Computer Science Department, Washington University in St. Louis, 2007.

Unlisted: numerous graduate and postgraduate presentations, including journals clubs and departmental research seminars.