Curriculum Vitae

Adel Nadjaran Toosi

Lecturer
Faculty of Information Technology
Monash University

Contact	
E-mail:	adel [dot] n [dot] toosi [at] monash [dot] edu
Homepage:	http://www.adelnadjarantoosi.info

Education:	
Jul. 2010 – Jan. 2015:	PhD in the Computer Science and Software Engineering, University of Melbourne, Australia
Sept. 2003 – Aug. 2006:	M.Sc. in Software Engineering, Ferdowsi University of Mashhad (FUM), Mashhad, Iran
Sept. 1998 – Jul. 2003:	B.Sc. in Software Engineering, Ferdowsi University of Mashhad (FUM), Mashhad, Iran

Work Experience:	
May 2018 -	Lecturer at Faculty of Information Technology, Clayton, Monash University
Sept. 2014 – May 2018:	Research Fellow at School of Computing and Information Systems, University of Melbourne
Jul. 2016 – Oct. 2016	Lecturer/Subject Coordinator, Distributed Systems (COMP90015, Semester 2, 2016 - 170 Students) Computing and Information Systems, University of Melbourne
July 2015 – Oct. 2015:	Tutor and Associate Lecturer, Distributed Systems (COMP90015, Semester 2, 2015 - 102 Students) Computing and Information Systems, University of Melbourne
Feb. 2015 – Jun. 2015:	Lecturer/Subject Coordinator, Distributed Systems (COMP90015, Semester 1, 2015 - 121 Students) Computing and Information Systems, University of Melbourne
July 2014 – Oct. 2014:	Tutor and Associate Lecturer, Distributed Systems (COMP90015, Semester 2, 2014 - 115 Students) Computing and Information Systems, University of Melbourne
Sept. 2006 – Jun.2010:	Lecturer, Azad University of Mashhad
2004 - 2007:	Part-time Lecturer, Azad University of Shirvan

2003 – 2004: Project manager and software engineer, Shargh Raya Co.

Research Interests:

- Distributed Systems and Cloud Computing
- Networks and Software Defined Networking
- Algorithm and Mechanism Design
- Energy Efficiency and Green Computing
- Software Engineering
- Soft Computing and Machine Learning

Currently, I am working on Auto-Scaling and Resource Coordination of Network Slices in Software-Defined Clouds.

Publication Statistics (As of July. 2018, SRC: Google Scholar):

- Total number of refereed publications: **33**
- Refereed Journal Publications: **20**
- Full published conference papers: **13**
- Citations for publications: **1371**
- Citations for publications from 2013: **1229**
- *h*-index all: **17**
- *h*-index from 2012: **15**

Research Grants and Sponsorships

1. Adel Nadjaran Toosi, Chief Investigator, *"Cost-Efficient Orchestration of Containers in Clouds"*, Samsung 2017 GRO award, Amount: US$120,000.
2. Adel Nadjaran Toosi, Chief Investigator, *"RenewMan: Managing Renewable Energy in Sustainable Cloud Data Centres"*, The University of Melbourne 2018 Early Career Researcher Grants Scheme, Amount: AU$32,302.
3. A. N. Toosi, R. Razzaghi, B. Bahrani, M. Singh, *"Algorithms and Software Systems for Green Cyberinfrastructure"*, 2018 Monash Infrastructure Research Seed Fund Grant, July 2018 - July 2019, Amount, AU$48,478.

Higher Degree Research (HDR) Students

Harshit Kapoor — M.Sc., Computer Science, University of Melbourne, (2016-2017) - Score
Thesis: Cost and Energy Efficient Job Scheduling for Cloud Data Centre

Bingfeng Liu — M.Sc., Computer Science, University of Melbourne, (2017-2018) – (Score 91/100)
Thesis: A Fuzzy logic based Auto-scaler for Web Applications in Cloud Computing Environments

Saeed Mirpour Marzuni Ph.D., Software Engineering, Ferdowsi University of Mashhad, (2017-)

TianZhang He — Ph.D., Computer Science, University of Melbourne, (July 2017-)

Publications:

Theses and Dissertations:

1. **Adel Nadjaran Toosi,** "On the economics of Infrastructure-as-a-Service cloud providers: Pricing, Market, and Profit Maximization", Ph.D. Thesis, *The University of Melbourne*, 2015.

2. **Adel Nadjaran Toosi,** "Network Intrusion Detection Based on an Evolutionary Soft Computing Model Using Neuro-Fuzzy Classifiers", MSc. Thesis, Ferdowsi University of Mashhad, Iran, 2006

3. **Adel Nadjaran Toosi**, "Design and implementation of a web portal for Information and Computer Center of FUM", BSc. Dissertation, *Ferdowsi University of Mashhad*, Iran, 2003

Refereed Journal Articles:

ERA at the end of the article refers to ERA 2010 rank.

4. Rajkumar Buyya, Satish Narayana Srirama, Giuliano Casale, Rodrigo Calheiros, Yogesh Simmhan, Blesson Varghese, Erol Gelenbe, Bahman Javadi, Luis Miguel Vaquero, Marco A. S. Netto, **Adel Nadjaran Toosi**, Maria Alejandra Rodriguez, Ignacio M. Llorente, Sabrina De Capitani di Vimercati, Pierangela Samarati, Dejan Milojicic, Carlos Varela, Rami Bahsoon, Marcos Dias de Assuncao, Omer Rana, Wanlei Zhou, Hai Jin, Wolfgang Gentzsch, Albert Zomaya, Haiying Shen A Manifesto for Future Generation Cloud Computing: Research Directions for the Next Decade ACM Computing Survey (ACM CSUR), vol. ??, no. ?? , pp. ??, ACM, doi: (Accepted 20 July 2018).

5. **Adel Nadjaran Toosi**, Jungmin Son, Rajkumar Buyya, CLOUDS-Pi: A Low-Cost Raspberry-Pi based Micro Data Center for Software-Defined Cloud Computing, IEEE Cloud Computing, doi:(Accepted 11th of July 2018)

6. Caesar Wu, **Adel Nadjaran Toosi**, Rajkumar Buyya, Kotagiri Ramamohanarao, Hedonic Pricing of Cloud Computing Services , IEEE Transaction on Cloud Computing, doi: 10.1109/TCC.2018.2858266 (available online on 23th of July 2018).

7. Wenhong Tian, Majun He, Wenxia Guo, Wenqiang Huang, Xiaoyu Shi, Mingsheng Shang, **Adel Nadjaran Toosi**, Rajkumar Buyya, "On minimizing total energy consumption in the scheduling of virtual machine reservations", Journal of Network and Computer Applications (JNCA), ISSN 1084-8045, Elsevier, doi:10.1016/j.jnca.2018.03.033 (Available online 7 April 2018).
   FOR = 100% 080501

8. Minxian Xu, **Adel Nadjaran Toosi**, and Rajkumar Buyya, iBrownout: An Integrated Approach for Managing Energy and Brownout in Container-based Clouds, IEEE Transactions on Sustainable Computing (T-SUSC), ISSN: 2377-3782, IEEE, USA, doi:10.1109/TSUSC.2018.2808493, (Available online on March. 1st, 2018).
   FOR = 100% 080501

9. **Adel Nadjaran Toosi**, Richard O. Sinnott, and Rajkumar Buyya, "Resource provisioning for data-intensive applications with deadline constraints on hybrid clouds using Aneka", *Future Generation Computer Systems (FGCS)*, vol. 79, part 2, pp. 765-775 , Elsevier, Feb. 2018. **[ERA A]**
   FOR = 100% 080501

10. Yaser Mansouri, **Adel Nadjaran Toosi**, Rajkumar Buyya, "Data Storage Management in Cloud Environments: Taxonomy and Survey", *ACM Computing Surveys (ACM CSUR)*, vol. 50, no. 6, pp. 91:1-91:51, ACM, Dec. 2017. **[ERA A*]**
    FOR = 100% 080501

11. Yaser Mansouri, **Adel Nadjaran Toosi**, and Rajkumar Buyya, "Cost Optimization for Dynamic Replication and Migration of Data in Cloud Data Centers", *IEEE Transactions on Cloud Computing (TCC)*, IEEE, doi:10.1109/TCC.2017.2659728, 2017. (in press, available online 26 January 2017).
    FOR = 100% 080501

12. Mohammad Sadegh Aslanpour, Mostafa Ghobaei Arani, and **Adel Nadjaran Toosi**, "Auto-scaling Web Applications in Clouds: A Cost-Aware Approach", *Journal of Network and Computer Applications (JNCA)*, vol. 95, pp. 26-41, Elsevier, Oct. 2017. **[ERA A]**
    FOR = 90% 080501, 10% 080505

13. Atefeh Khosravi, **Adel Nadjaran Toosi**, and Rajkumar Buyya, "Online Virtual Machine Migration for Renewable Energy Usage Maximization in Geographically Distributed Cloud Data Centers", *Concurrency and Computation: Practice and Experience (CCPE)*, Wiley, vol. 29, no. 18, Sept. 2017. **[ERA A]**
    FOR = 100% 080501

14. **Adel Nadjaran Toosi**, Chenhao Qu, Marcos Dias de Assuncao, and Rajkumar Buyya, "Renewable-aware Geographical Load Balancing of Web Applications for Sustainable Data Centers", *Journal of Network and Computer Applications (JNCA)*, vol. 83, pp. 155-168, Elsevier, Apr. 2017. **[ERA A]**
    FOR = 90% 080501, 10% 080505

15. **Adel Nadjaran Toosi**, Kurt Vanmechelen, Farzad Khodadadi, Rajkumar Buyya, "An Auction Mechanism for Cloud Spot Markets", *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, vol. 11, no. 1, pp. 2:1-2:33, IEEE, Apr. 2016.
    FOR = 80% 080501, 20% 140299

16. **Adel Nadjaran Toosi**, Farzad Khodadadi, Rajkumar Buyya, "SipaaS: Spot instance pricing as a Service framework and its implementation in OpenStack", *Concurrency and Computation: Practice and Experiences (CCPE)*, vol. 28, no. 13, pp. 3672-3690, Wiley, Aug. 2015. **[ERA A]**
    FOR = 90% 080501, 10% 140299, 10% 080399

17. **Adel Nadjaran Toosi**, Kurt Vanmechelen, Kotagiri Ramamohanarao, Rajkumar Buyya, "Revenue Maximization with Optimal Capacity Control in Infrastructure as a Service Cloud Markets", *IEEE Transactions on Cloud Computing (TCC)*, vol. 3, no. 3, pp. 261-274, IEEE, Jul. 2015.
    FOR = 90% 080501, 10% 140299

18. Mehdi Neshat, Ghodrat Sepidnam, Mehdi Sargolzaei, and **Adel Nadjaran Toosi**, "Artificial fish swarm algorithm: a survey of the state-of-the-art, hybridization, combinatorial and indicative applications", *Artificial Intelligence Review*, pp. 1-33, Dec. 2014.
    FOR = 100% 080105

19. Saurabh Kumar Garg, **Adel Nadjaran Toosi**, Srinivasa K. Gopalaiyengar, Rajkumar Buyya, "SLA-based Virtual Machine Management for Heterogeneous Workloads in a Cloud Datacenter", *Journal of Network and Computer Applications (JNCA)*, vol. 45, no. 10, pp. 108-120, Elsevier, Oct. 2014. **[ERA A]**
    FOR = 100% 080501

20. **Adel Nadjaran Toosi**, Rodrigo N. Calheiros, Rajkumar Buyya, "Interconnected cloud computing environments: Challenges, taxonomy, and survey", *ACM Computing Surveys (ACM CSUR)*, vol. 47, no. 1, pp. 7:1–7:47, ACM, doi:10.1145/2593512, Jul. 2014. **[ERA A*]**
    FOR = 100% 080501

21. Mohsen Amini Salehi, **Adel Nadjaran Toosi**, Rajkumar Buyya, "Contention Management in Federated Virtualized Distributed Systems: Implementation and Evaluation, *Software: Practice and Experience (SPE)*, vol. 44, no. 3, pp. 353-368, Wiley, Feb. 2014. **[ERA A]**
    FOR = 100% 080501

22. Rodrigo N. Calheiros, **Adel Nadjaran Toosi**, Christian Vecchiola, Rajkumar Buyya, A Coordinator for Scaling Elastic Applications Across Multiple Clouds", *Future Generation Computer Systems (FGCS)*, vol. 28, no. 8, pp. 1350-1362, Elsevier, Oct. 2012. **[ERA A]**
    FOR = 100% 080501

23. **Adel Nadjaran Toosi**, Mohsen Kahani, "A New Approach to Intrusion Detection Based on an Evolutionary Soft Computing Model Using Neuro-Fuzzy Classifiers", *Computer Communications*, vol. 30, no. 10, pp. 2201-2212, Elsevier, Jul. 2007.
    FOR = 70% 080303, 30% 080105

***Refereed Conference Papers*:**

24. Bingfeng Liu, Rajkumar Buyya, and **Adel Nadjaran Toosi**, "A Fuzzy-based Auto-scaler for Web Applications in Cloud Computing Environments", Accepted for the publication in the 16th International Conference on Service-Oriented Computing, November 12-15, 2018.

25. Ehsan Nadjaran Toosi, **Adel Nadjaran Toosi**, Reza Godaz, and Rajkumar Buyya, "Integrated IoT and Cloud Environment for Fingerprint Recognition", In Proceedings of the International Conference on Fog Computing and Internet of Things (ICFCIOT 2017), Dec. 2017, Hyderabad, India, pp. 21-22.
    FOR = 30% 080504, 70% 080501

26. **Adel Nadjaran Toosi** and Rajkumar Buyya, "A Fuzzy Logic-based Controller for Cost and Energy Efficient Load Balancing in Geo-Distributed Data Centers", Proceedings of the *8th IEEE/ACM International Conference on Utility and Cloud Computing (UCC'15)*, pp. 186-194, Limassol, Cyprus, Dec. 2015.
    FOR = 90% 080501, 10% 080105

27. Yaser Mansouri, **Adel Nadjaran Toosi**, Rajkumar Buyya, "Brokering Algorithms for Optimizing the Availability and Cost of Cloud Storage Services", Proceedings of *IEEE International Conference on Cloud Computing Technology and Science (CLOUDCOM '13)*, pp. 581-589, Bristol, UK, Dec. 2013.
    FOR = 100% 080501

28. **Adel Nadjaran Toosi**, Ruppa K. Thulasiram, and Rajkumar Buyya, "Financial Option Market Model for Federated Cloud Environments", Proceedings of the *Fifth IEEE International Conference on Utility and Cloud Computing (UCC'12)*, pp. 3-12, Chicago, USA, Nov. 2012.
    FOR = 90% 080501, 10% 140299

29. **Adel Nadjaran Toosi**, Rodrigo N. Calheiros, Ruppa K. Thulasiram, Rajkumar Buyya, "Resource Provisioning Policies to Increase IaaS Provider's Profit in a Federated Cloud Environment", Proceeding of *13th IEEE International Conference on High Performance Computing and Communications (HPCC'11)*, pp. 279 -287, Banff, Canada, Sept. 2011.
    FOR = 100% 080501

30. Danial Yazdani, Hadi Nabizadeh, Elyas Mohamadzadeh Kosari, **Adel Nadjaran Toosi**, "Color Quantization Using Modified Artificial Fish Swarm Algorithm", Proceeding of *Advances in Artificial Intelligence (AI'11)*, pp. 382-391, Perth, Australia, Dec. 2011.
    FOR = 100% 080105

31. Danial Yazdani, **Adel Nadjaran Toosi**, Mohammad Reza Meybodi. "Fuzzy Adaptive Artificial Fish Swarm Algorithm", Proceeding of *Advances in Artificial Intelligence (AI'10)*, pp. 334-343, Adelaide, Australia, Dec. 2010.
    FOR = 100% 080105

32. **Adel Nadjaran Toosi**, Mohsen Kahani, "A Novel Soft Computing Model Using Adaptive Neuro-Fuzzy Inference System for Intrusion Detection", Proceeding of 2007 *IEEE International Conference on Networking, Sensing and Control; IEEE Systems,* **Man and Cybernetic Society**, pp. 834-839, London, UK, April 2007.
    FOR = 90% 080303, 10% 080105

33. **Adel Nadjaran Toosi**, Mohsen Kahani, Reza Monsefi, "Intrusion Detection Based on Neuro-Fuzzy Classification", Proceeding of *IEEE International Conference on Computing and Informatics*, 2006, Kuala Lumpur, Malaysia.
    FOR = 90% 080303, 10% 080105

34. **Adel Nadjaran Toosi**, Mohsen Kahani, "A Neuro-Fuzzy Classifier for Intrusion Detection Systems", Proceeding of *11th International CSI Computer Conference, School of Computer Science*, Jan. 2006, Tehran, Iran.
    FOR = 90% 080303, 10% 080105

35. **Adel Nadjaran Toosi**, Mohammad Hossein Yaghmaee Moghaddam, "A Fuzzy-Based TCP Congestion Window Controller", Proceedings of *Third International Symposium on Telecommunications (IST2005)*, pp. 641-646, Shiraz, Iran, Sept. 2005.
36. FOR = 90% 080503, 10% 080105

Book Chapters:

37. Adel Nadjaran Toosi, Redowan Mahmud, Qinghua Chi and Rajkumar Buyya, "Management and Orchestration of Network Slices in 5G, Fog, Edge and Clouds", Fog and Edge Computing: Principles and Paradigms, R. Buyya and S. Srirama (eds), Wiley, 2018 (Accepted on March 2018).
    FOR = 90% 080501, 10% 080503

38. **Adel Nadjaran Toosi** and Rajkumar Buyya, "Virtual Networking with Azure for hybrid Cloud Computing in Aneka", Research Advances in Cloud Computing, S. Chaudhary, G. Somani, and R. Buyya (eds), doi: 10.1007/978-981-10-5026-8_5, ISBN: 978-981-10-5026-8, Springer, pp. 93-114, 2017.
    FOR = 90% 080501, 10% 080503

Professional Services:

Key Note Speakers:

- "Innovations and Trends in Cloud Computing", The 7th International Conference on Computer and Knowledge Engineering (ICCKE 2017)

Technical Program Committee (PC) Member:

- The 9th,10th,11th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2016,2017,2018)
- The 8th, 9th International Conference on Cloud Computing, GRIDs, and Virtualization CLOUD COMPUTING, Athens, Greece, (2017,2018).
- The 11th International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS), 2017.
- The 19th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID), 2018.

Organizing Committee Member:

- The 4th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2010)

Professional Memberships:

- Institute of Electrical and Electronics Engineers (IEEE), IEEE Member, Jan, 2011
- Institute of Electrical and Electronics Engineers (IEEE), IEEE Young Professionals, Jan. 2014
- Association for Computing Machinery (ACM) , July 2016

Curriculum development:

- Programming Challenge for Girls (PC4G), Workshops for computer programming for Year 9 school girls and teachers

External Reviewer:

Journals:

- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Transactions on Cloud Computing (TCC)
- IEEE/ACM Transactions on Networking (TON)
- ACM Transactions on Multimedia Computing Communications and Applications (TOMM)
- Journal of Network and Computer Applications (JNCA)
- Software: Practice and Experience (SPE)
- Concurrency and Computation: Practice and Experience (CCPE)
- The Computer Journal, Oxford Academic
- IEEE Transactions on Multi-Scale Computing Systems

Conferences:

- The International Conference on Utility and Cloud Computing (UCC)
- IEEE Cloud Computing
- IEEE Cluster Computing
- International Conference on Contemporary Computing (IC3)
- Conference on Computer and Knowledge Engineering (ICCKE)

Master's Theses:

- Department of Mathematics and Computer Science, University of Antwerp, Belgium
- School of Computing and Information Systems, University of Melbourne, Australia

Awards, Honors and Recognitions:

2016 Nominee for Chancellor's Prize for Excellence in the PhD Thesis, University of Melbourne

2016 Nominee for John Melvin Memorial Scholarship for the Best PhD Thesis in Engineering, University of Melbourne

2016 Nominee for John Makepeace Bennett Best PhD Thesis Award, Computing Research, and Education Association of Australasia (CORE).

2012 Melbourne Abroad Travelling Scholarships (MATS)

2012 Google Travel Prize, Google

2010 Melbourne International Research Scholarship (MIRS)
2010 Melbourne International Fee Remission Scholarship (MIFRS)
2010 Travel bursary, EII PhD School: Cloud Computing, Service Computing & Social Networks, University of Queensland
2009 Nominee for the best lecturer award at Azad University of Mashhad, Iran
2008 Nominee for the best lecturer award at Azad University of Mashhad, Iran
2003 Ranked 225th among roughly 20,000 computer engineering students in National Entrance Exam for Graduate Studies in Software Engineering Major, Iran.
2002 Runner-up in the ACM programming contest of the FUM, Mashhad, Iran.
1998 Ranked 769th among about 290,000 high school students in Nationwide University Entrance Exam in Engineering/Math/Science, Iran.

Certificates and Training

2017 Contribution in Smart-Car features contest, eYeka
2017 Workshop on Information Privacy, Legal Services, University of Melbourne
2016 Workshop for New supervisors of graduate research candidates, University of Melbourne
2016 Workshop on Promoting Positive Workplace Behaviors, University of Melbourne
2015 Statistics for Research Workers, School of Mathematics and Statistics, First Class Honors (H1-90/100)
2014 Microsoft Azure for Research Training
2013 Workshop on OHS Roles and Responsibilities for Supervisors and Managers, University of Melbourne

Open Source and Technologies

Knowledge:

OpenStack:

Open-source IaaS Cloud management platform designed to control large pools of computing, storage, and networking resources in a data center

Eucalyptus:

Open-source software for building private and hybrid clouds compatible with AWS APIs.

OpenNebula:

Open-source cloud computing platform for managing heterogeneously distributed data center infrastructures

Contributed:

CloudSim:

Java framework for modeling and simulation of Cloud computing environments

InterCloud:

Java framework for interconnecting Cloud computing environments and facilitates scalable provisioning of application services s across multiple Clouds

Aneka:

Platform-as-a-Service framework for building customized applications and deploying them on either public or private Clouds

SipaaS:

Spot Instance Pricing as a Service Framework for OpenStack

Technical Skill Sets:

-Programming Languages and runtime environments:

Java, C, C++, C#, Python, Pascal, .Net, MPI, MATLAB, MINITAB

-Web technologies:

HTML, PHP, Java Script, Ajax, XML, JSON, Spring MVC

-Databases:

SQL Server, MySql, Sql, Hibernate

Operating Systems:

Linux (kernel level and experience with shell scripting), Mac OSX, Windows (Desktop and Server), Xen, VMware, and KVM

Networks:

SDN, OpenFlow, OpenDaylight, sFlow, Mininet, OpenStack Neutron, VPN, Ethernet protocols (LAN), DNS, DHCP, HTTP, ICMP, SSL, RMI, OSI Model, TCP/IP protocols, Peer to Peer systems (Overlay networks), IP multicasting, and Socket Programming

Cloud Technologies:

Microsoft Azure, Amazon Web Services (EC2, S3, EBS, Auto Scaling), Google G suite, OpenStack, OpenNebula, Eucalyptus

Teaching:

Expert in Teaching IT concepts and communicate IT knowledge

Experienced in teaching following IT subjects:

Operating Systems, Distributed Systems, Internet Engineering, Software Engineering, Advanced Topics in Software Engineering, Database Systems, Advanced Programming, Formal Languages and Automata Theory, Compiler Design, Data Storage and Retrieval

References:

References available upon request.