Haitham Seada

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Current position

2013-Present	*Research Assistant & PhD Candidate* Department of Computer Science and Engineering, Michigan State University (expected graduation: Fall 2017)

Areas of specialization

Multiobjective Optimization • Evolutionary Algorithms • Linear Programming • Convex Optimization • Neuroevolution • Computational Intelligence

Appointments held

2016-2016	Teaching Assistant, Michigan State University, USA
2009-2013	Assistant Lecturer, Zagazig University, Egypt
2005-2009	Teaching Assistant, Zagazig University, Egypt
2006-2013	Freelance S/W Developer, Egypt
2006-2011	Freelance Java Instructor, Egypt

Education

≈ 2017	PhD in Computer Science, Michigan State University, USA
2009	MSc in Computer Science (Bioinformatics), Zagazig University Egypt
2005	BSc in Computer Science, Zagazig University, Egypt

Grants, honors & awards

2012	Egyptian *Fulbright* Missions Program (EFMP) grant, The Binational Fulbright Commission in Egypt

Technical Skills (top 5)

Java • Matlab • Python • C++ • MySQL • Servlets/JSP

Publications & talks

Peer-reviewed articles

2017   **Seada, H.**; Abouhawwash, M; Deb, K., "Multi-Phase Balance of Diversity and Convergence in Multiobjective Optimization", *IEEE Transactions on Evolutionary Computation*, 2017 (under review)

2017   Hadka, D.; Salazar, Z.; Reed, P.; **Seada, H.**; Deb, K., "Real World Diagnostic Benchmarking for Modern Many-Objective Evolutionary Algorithms", *IEEE Transactions on Evolutionary Computation*, 2017 (under review)

2017   Deb, K.; Abouhawwash, M.; **Seada, H.**, "A Computationally Fast Convergence Measure and Implementation for Single, Multiple and Many-Objective Optimization", *IEEE Transactions on Emerging Topics in Computational Intelligence*, 2017. (in press)

2017   **Seada, H.**; Abouhawwash M.; Deb K., "Towards a Better Balance of Diversity and Convergence in NSGA-III: First Results.", *International Conference on Evolutionary Multi-Criterion Optimization.* Springer, Cham, 2017.

2017   Kousa, Y.A.; Mansour, T.A.; **Seada, H.**, Matoo, S.; Schutte, B.C., "Shared molecular networks in orofacial and neural tube development.", *Birth defects research*, no.109(2), pp.169-179, 2017

2016   **Seada, H.**; Abouhawwash, M.; Deb, K., "Towards a Better Diversity of Evolutionary Multi-Criterion Optimization Algorithms using Local Searches." *Proceedings of the 2016 on Genetic and Evolutionary Computation Conference Companion*, ACM, 2016.

2016   Abouhawwash, M.; **Seada, H.**; Deb, K., "Towards Faster Convergence of Evolutionary Multi-Criterion Optimization Algorithms using Karush-Kuhn-Tucker Optimality Based Local Search", *Computers & Operations Research*, 2016

2015   **Seada, H.**; Deb, K., "A Unified Evolutionary Optimization Procedure for Single, Multiple, and Many Objectives," *IEEE Transactions on Evolutionary Computation*, no.99, pp.1-1

2015   **Seada, H.**; Deb, K., "Effect of selection operator on NSGA-III in single, multi, and many-objective optimization", *IEEE Congress on Evolutionary Computation (CEC)*, pp.2915-2922, 25-28 May 2015

2015   **Seada, H.**; Deb, K., "U-NSGA-III: A Unified Evolutionary Optimization Procedure for Single, Multiple, and Many Objectives: Proof-of-Principle Results", *8th Conference on Evolutionary Multiobjective Optimization*, 2015, Portugal.

2009   El-Henawy, I.; Kamal, A.; Al-Shishiny, H.; **Seada, H.**, "A Central-3-Residues-Based clustering approach for studying the effect of hydrophobicity on protein backbone angles", *Egyptian Computer Science Journal*, Volume 32, Issue 1, May 2009

Talks & Volunteer Work

2014-Present   Representing Egypt in the "African Tea Time" organized by the African Studies Center at Michigan State University, USA

2010-2011   Online Content Creator with 34 technical tutorials spanning the basics of QT, Java, Object Oriented Programming, Client Server Applications etc. (narrated in Arabic or English).
https://www.youtube.com/user/ooohaithamooo/videos
https://vimeo.com/channels/egjug/videos

2007-2012   Frequent Speaker at the events organized by the Egyptian Java Users Group (EJJUG), Egypt

2006-2010   Frequent Speaker at the events organized by the "Media Center of the South" to promote technology awareness in rural areas, Egypt

Teaching

2016   Introduction to Programming in Python, *Michigan State University*

2012   Computational Intelligence, *Zagazig University*

2011-2012	Formal Languages, *Zagazig University*
2011-2012	Socket Programming in Java, *Zagazig University*
2011-2012	Artificial Intelligence, *Zagazig University*
2011	Game Programming, *Zagazig University*
2010	JavaME, *C-Cell Academy*
2010	Selected Topics in JavaSE & JavaME, *JELECOM*
2009,2012	Operating System + Introduction to Linux, *Zagazig University*
2009	JavaSE level I, *HI-Q Academy*
2009,2010	JavaSE (level I + level II) + JavaEE (level I + level II), *C-Cell Academy*
2008,2011	JavaSE level I + JavaSE level II, *EMAK Academy*
2008	Oracle ADF JSF Components, *EMAK Academy*
2007	JavaSE level I + level II, *SESCO institute*
2007	C# level I, *ICT-Egypt*
2007	Object Oriented Programming, *Zagazig University*
2007	Data Structures, *Zagazig University*
2006-2009	Introduction to C++, *Zagazig University*
2006	JavaSE level I, *ITG-Cairo*
2006-2009	Compiler construction using Java & JavaCC, *Zagazig University*
2006-2007	Socket Programming using C#, *Zagazig University*
2005	Introduction to C# programming, *Zagazig University*

Service to the profession (selected projects)

KKTPM Calculator – An *Open-Source* Karush Kuhn Tucker Proximity Measure calculator. Supports XML-based inputs and symbolic mathematical function evaluations.

Unified NSGA-III – An *Open-Source* implementation of our published many-objective optimization algorithm. (work in progress)

Tex2Math – An extensible *Open Source* API for parsing and evaluating mathematical expressions. The library supports a wide range of operators. It also allows for a great deal of flexibility on the user's side. (distributed as a part of the KKTPM Calculator)

Automatic Timetabler – A Simulated Annealing (SA) based application for schools/university timetabling optimization. The application produces full timetables in different formats satisfying a highly-conflicting set of hard and soft constraints.

Multilingual Chatterbox – Pluggable/Customizable Chatting service with major emphasis on Arabic support and content filtration.

CDC SCORM editor – SCORM course editor for handheld devices. (SCORM is a standard electronic format used in e-learning)

ORION – An early social network mobile client for CLDC devices. The application includes a photo gallery, RSS feeds reader, e-mail client, Advertisement utility and a Remote Desktop Control system. *(funded by ICT-Egypt)*

Instant Desktop Arabic Text Search Engine – An *instant* text-retrieval application for small sized textual data. This application combines text stemming and normalization with hashing techniques to create a constant-complexity non-exact-matching search engine in Arabic text.

Land-use allocation using gene expression programming (GEP) – An application that uses GEP to optimize cost and compactness in mid-scale land-use allocation problems. *(Compatible with Map Objects API from ESRI).*