Curriculum Vitae

Fares Fraij
Assistant Professor of Instruction

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Education

2005	**Doctor of Philosophy**, Computer Science, University of Texas at El Paso, El Paso, Texas, USA.
	Dissertation Title: Verification of Transformation Rules of the Higher-Order Transformation Language TL.
	Co-Advisor: Steve M. Roach, **Co-Advisor:** J Strother Moore
1998	**Master of Computer Science**, Al al-Bayt University, Mafraq, Jordan.
	Thesis Title: Contiguous and Non-Contiguous Space Sharing Policies for Parallel Computers.
	Advisor: Ismail M. Ababneh
1995	**Bachelor of Computer Science**, University of Jordan, Amman, Jordan.

Administrative Experience

2009 - 2011	**Acting Dean** of College of Information Technology, Al-Hussein Bin Talal University, Ma'an, Jordan.
2007 - 2009	**Acting Dean** of College of Computer Engineering and Information Technology, Al-Hussein Bin Talal University, Ma'an, Jordan.
2005 - 2007	**Acting Director** of Computer and Information Technology Center, Al-Hussein Bin Talal University, Ma'an, Jordan.
2005 - 2007	**Director** of ICDL Center, Al-Hussein Bin Talal University, Ma'an, Jordan.
2000 - 2001	**Acting Director** of Computer Center, Al-Hussein Bin Talal University, Ma'an, Jordan.
1999 - 2000	**Acting Director** of the Department of Public Relations and Community Service, Al-Hussein Bin Talal University, Ma'an, Jordan.

Academic Experience

2018 – present	**Assistant Professor of Instruction,** Department of Computer Science, The University of Texas at Austin, Austin, TX, USA.
2015 – 2018	**Lecturer**, Department of Computer Science, The University of Texas at Austin, Austin, TX, USA.
2011 – 2015	**Visiting Associate Professor**, Department of Computer Science, Taif University, Taif, Kingdom of Saudi Arabia.
2010 – 2011	**Associate Professor**, Department of Software Engineering, Al-Hussein Bin Talal University, Ma'an, Jordan.

2005 – 2010	**Assistant Professor**, Department of Software Engineering, Al-Hussein Bin Talal University, Ma'an, Jordan.
Fall and Spring 2004	**Lecturer**, Department of Computer Science, University of Texas at El Paso, El Paso, Texas, USA.
2003 – 2004	**Research Assistant**, Department of Computer Science, University of Texas at El Paso, El Paso, Texas, USA.
2001 – 2003	**Teaching Assistant**, Department of Computer Science, University of Texas at El Paso, El Paso, Texas, USA.
1999 – 2001	**Full-Time Lecturer**, Department of Computer Science, Al-Hussein Bin Talal University, Ma'an, Jordan.

Teaching Experience

I taught **30 different undergraduate courses at four universities**, The University of Texas at Austin (UT-Austin), 2015 - present, Taif University (TU), KSA, 2011 – 2015, Al-Hussein Bin Talal University (AHU), Jordan, 1999 – 2001 and 2005 – 2011, and The University of Texas at El Paso (UTEP), USA, 9/2003 – 6/2004, I was pursuing my Ph.D. at UTEP.

❖ As an *Assistant Professor* of Instruction at *UT-Austin*, 2015-present, I taught the following courses.
  - **Algorithms and Complexity:** fall 2015, spring 2016, fall 2016, fall 2017, spring 2018, fall 2018, fall 2019, fall 2020, spring 2021, fall 2021, spring 2022, spring 2023.
  - **Software Engineering**: fall 2016, spring 2017, fall 2018, spring 2019, summer 2020, summer 2021, summer 2022, summer 2023.
  - **Elements of Software Engineering:** spring 2017, fall 2017, fall 2018, spring 2019, summer 2019.
  - **Discrete Mathematical Structures:** fall 2018, spring 2019.
  - **Elements of Software Engineering I:** fall 2019, summer 2020, fall 2020, summer 2021, fall 2021, spring 2022, fall 2022.
  - **Elements of Software Engineering II:** spring 2020, summer 2020, spring 2021, summer 2021, spring 2023.

❖ As a *Visiting Associate Professor* at *TU*, 2011-2015, I taught the following courses from the study plan of the Department of Computer Science.
  - **Modeling and Simulation:** fall 2011, summer 2012, fall 2012, summer 2013, fall 2013, fall 2013.
  - **Programming II:** spring 2012.
  - **Data Security:** fall 2012.
  - **Artificial intelligence:** summer 2012.
  - **E-Commerce:** summer 2013, summer 2014
  - **Project Management:** summer 2012, summer 2013.
  - **Discrete Mathematics:** fall 2013, fall 2014, Spring 2015
  - **Software Engineering:** spring 2014, summer 2014.

❖ As an *Assistant Professor/Associate Professor* at *AHU*, 2005-2011, I taught the following courses from the study plans of the Department of Computer Science and the Department of Software Engineering:
  - **Software Engineering I (Software Requirements Engineering):** fall 2005, spring 2006, summer 2006, spring 2008, summer 2010, fall 2010.
  - **Software Engineering II (Software Design and Implementation):** spring 2005, fall 2005, fall 2006, spring 2007, fall 2007, summer 2007, fall 2008, summer 2008, summer 2009, fall 2010, summer 2010, summer 2011.

- **Software Engineering III (Software Verification and Validation):** spring 2007, spring 2008, fall 2008, summer 2009, fall 2009, summer 2010.
- **Java Programming Language:** fall 2005, spring 2006, summer 2006, fall 2006, spring 2007, summer 2007, fall 2007, spring 2008, summer 2008, spring 2008, spring 2009, fall 2009, fall 2010.
- **Project Management:** summer 2011.
- **Human-Computer Interaction:** spring 2007, summer 2007, summer 2008, spring 2009.
- **Special Topics - Formal Methods:** fall 2010.
- **Discrete Mathematics:** fall 2008, spring 2009, fall 2009, spring 2010, spring 2011.
- **Adding Value through Innovation:** spring 2010.
- **Professional and Ethical Practices:** fall 2008, spring 2011.
- **Technical Writing Skills:** fall 2007, summer 2008, fall 2008, spring 2009, fall 2010, spring 2011.
- **Graduation Project:** fall 2005, fall 2006, spring 2007, summer 2007, fall 2007, spring 2008, spring 2009, fall 2009, spring 2011.

❖ As an *Instructor* in the Department of Computer Science at *UTEP*, I taught the undergraduate course **Computer Architecture** in the fall and spring of 2004.

❖ As a *full-time lecturer* at *AHU,* 1999 – 2001, I taught the following courses:
a. College of Education courses
- **Educational Computer:** fall 1999, spring 2000, summer 2000.
- **Mathematics for Classroom Teachers I:** fall 1999, summer 2000.

b. Computer Science Courses
- **Digital Logic Design:** spring 2000.
- **Computer Skills I:** fall 1999.
- **Computer Skills II:** spring 2000

Research

My major research interests are:
- Automatic Theorem Proving,
- Computer-Aided Instruction, and
- Visual-Assisted Pedagogy.

Publications

Refereed Journal Articles
1. **Fares Fraij**, "Visual Imagery Identification of Transitive Relations," International Journal of Technology Enhanced Learning, Vol. 6 No. 2, 2014, pp. 186-193.
2. Ayman Al-Dmour**, Fares Fraij**, "Segmenting Arabic Handwritten Documents into Text Lines and Words," International Journal of Advancements in Computing Technology, Vol. 6, No. 3, 2014, pp. 109-119.
3. **Fares Fraij**, Ayman Al-Dmour, "Effect of Visual-Assisted Pedagogy for Teaching and Learning Properties of Relations," International Journal of Technology Enhanced Learning, Vol. 5, No. 2, 2013, pp. 168-177.
4. **Fares Fraij**, Bassam Al-Mahadeen, "The Effect of Visual and Interactive Tools on Students' Performance in Identifying one-to-one Functions," Journal of Applied Computer Science & Mathematics, Vol. 6, No. 13, 2012, pp. 24-29.

5. **Fares Fraij,** Ayman Al-Dmour, Rafeeq Al-Hashemi and Ahmed Musa, "An Evolving Recommender-Based Framework for Virtual Learning Communities," International Journal of Web Based Communities, Vol. 8 No. 3, 2012, pp. 322-332.
6. Rafeeq Al-Hashemi, Ayman Al-Dmour, **Fares Fraij**, Ahmed Musa, "A Grayscale Semi-Lossless Image Compression Technique Using RLE," Journal of Applied Computer Science & Mathematics, Vol. 5, No. 10, 2011, pp. 9-13.
7. Suleiman Al-Khattab, **Fares Fraij**, "Students' Perception of Service Quality in Student Information System," Journal of Management & Marketing, Vol. 9, No. 1, 2011, pp. 111 - 126.
8. **Fares Fraij, "**The Impact of Feedback in Computer-Aided Instruction," International Journal of Soft Computing," Vol. 5, No. 2, 2010, pp. 67-71.
9. Ahmed Musa, Ayman Al-Dmour, **Fares Fraij**, Osama Al-Khaleel, and Mansour Irshid, "A Dynamic and Secure Arabic Text Compression Technique Using Bitwise Lempel-Ziv Algorithm," Vol. 9, No. 4, 2010, pp. 673-679.
10. **Fares Fraij**, Mahmoud Al-Quraan, Awni Al-Dababseh and Sadoon Al-Obaidy, "The Impact of Employing Technology in Teaching a Mathematics Course," International Journal of Innovation and Learning, Vol. 8. No. 2, 2010, pp. 170-188.
11. Ahmed Musa, Ayman Al-Dmour, **Fares Fraij**, Virgilio Gonzalez, Rafeeq Al-Hashemi, "Developing a virtual laboratory for a communication and computer networking course," International Journal of Continuing Engineering Education and Life-Long Learning, Vol. 20, No. 3/4/5, 2010, pp. 390 – 406.
12. Ayman Al-Dmour, Mowafaq Hasan, Ahmed Musa, **Fares Fraij**, "An Efficient Numerical Technique for Solving Fredholm Second Kind Linear Integral Equations," AMSE Journals: Advances in Modeling: General Mathematics, Vol. 46, No. 2, 2009, pp. 11-19.
13. **Fares Fraij** and Victor Winter, "A suggested Generic Intelligent Tutoring Framework," AMSE Journals: Lectures on Modeling and Simulation, Vol. 9, Issue 3, 2008, pp. 223-231.
14. Victor Winter, Jason Beranek, **Fares Fraij**, Steve Roach, and Greg Wickstrom, "A Transformational Perspective into the Core of an Abstract Class Loader for the SSP," ACM Transactions on Embedded Computing Systems, Vol. 5, No. 4, November 2006, pp. 773-818.
15. Ismail Ababneh and **Fares Fraij**, "Folding Contiguous and Non-Contiguous Space Sharing Policies for Parallel Computers," Mut'ah Journal for Research and Studies/Natural and Applied Sciences Series, Vol. 16, No. 3, 2001, pp. 9-34.

Refereed Conferences and Workshop
1. **Fares Fraij**, Mahmoud Al-Quraan, Victor Winter, Arafat Awajan and Ishraq Al-Awamleh, "Software-Assisted Pedagogy for a Mathematics Course," In Proceedings of the International Conference on Excellence In Education 2009: Future Minds and Creativity, Ulm, Germany, 2009
2. Ahmed Musa, Ayman Al-Dmour, **Fares Fraij**, Osama Al-Khaleel, and Mansour Irshid, "Arabic Text Compression Technique based on Lempel-Ziv Algorithm," The 2009 International Conference on Information and Knowledge Engineering IKE'09, Las Vegas, NV, USA, July 13-16, 2009.
3. **Fares Fraij** and Steve Roach, "Proof of Transitive Closure Property of Directed Acyclic Graphs," International Workshop on the ACL2 Theorem Prover and Its Applications ACL2 (2009), Northeastern University, Boston, MA, USA, May 11-12, 2009.
4. **Fares Fraij** and Victor Winter, "A Suggested Generic Intelligent Tutoring Framework," In Proceedings of the International Conference on Modelling and Simulation (MS), 2008, Petra, Jordan, November 18-20, pp. 178-182.
5. **Fares Fraij**, "Visual and Interactive Computer-Based Software for Teaching a Mathematic course: an Approach," In Proceedings of the IEEE Conference on AI Tools in Engineering, Pune, India, March 6-8, 2008, p. 39.

6. Victor L. Winter, Jason Beranek, Azamatbek Mametjanov, **Fares Fraij**, Steve Roach, Greg Wickstrom, "A Transformational Overview of the Core Functionality of an Abstract Class Loader for the SSP," Tenth IEEE International Workshop on Object-oriented Real-time Dependable Systems (WORDS 2005) Feb 2-4, 2005, Sedona, Arizona, pp. 301-311.
7. **Fares Fraij** and Steve Roach, "Verifying Transformation Rules of the HATS High-Assurance Transformation System: An Approach," In M. Kaufmann and J S. Moore, editors, 5th International Workshop on the ACL2 Theorem Prover and Its Applications (ACL2 2004), Austin, TX, November 2004.
8. Victor Winter, Steve Roach, and **Fares Fraij**, "Higher-Order Strategic Programming: A Road to Software Assurance," The Eighth IASTED International Conference on Software Engineering and Applications, Cambridge, MI, 2004, pp. 350-355.
9. Ismail Ababneh and **Fares Fraij**, "Contiguous and Non-contiguous Space Sharing Policies for Parallel Computers," Fourth International Jordanian Mathematics Conference, Amman, Jordan, August 1998.

   Technical Reports
1. Greg Wickstrom, Victor Winter, Jason Beranek, Steve Roach, and **Fares Fraij**, "An Abstract Class Loader for the SSP and its Implementation in TL," Sandia Report SAND2004-3225, Unlimited Release Printed August 2004, Sandia National Laboratories.
2. Victor Winter, Steve Roach, and **Fares Fraij**, "Dependable Software through Higher-order Strategic Programming," Sandia Report SAND2004-0868, Unlimited Release Printed March 2004, Sandia National Laboratories.

Awards, Scholarships, and Distinctions

1. 2023, **Most Active Reviewer Award** for working as an External Exam Moderator, Dean of the College of Arts and Science, Applied Science University, Kingdom of Bahrain.
2. 2019, **Appreciation Letter**, Chair of the Department of Computer Science, Applied Science University, Kingdom of Bahrain.
3. 2007, **Research Fund**, Deanship of Scientific Research, Al-Hussein Bin Talal University, Jordan.
4. 2005, **Outstanding Dissertation Award**, University of Texas at El Paso, USA.
5. 2005, **Fellowship** for the Spring 2005, Department of Computer Science, University of Texas at Austin, USA.
6. 2005, **Research Fund**, Graduate School, University of Texas at El Paso, USA.
7. 2004, **Graduate School Professional Funding Award**, University of Texas at El Paso, USA.
8. 2003, **Graduate School Professional Funding Award**, University of Texas at El Paso, USA.
9. 1998, **Rank one** out of six master's students, Department of Computer Science, Al al-Bayt University, Jordan.