

# Salam Daher

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- <https://people.njit.edu/faculty/daher>  
<https://sreal.ucf.edu/people/salam-daher/>  
<http://salamdaher.com/portfolio/>

## ACADEMIC POSITIONS

### NEW JERSEY INSTITUTE OF TECHNOLOGY

Assistant Professor in the Ying Wu College of Computing.  
Primary appointment in the department of Informatics.  
Secondary appointment in the department of Computer Science.  
Teaching IT201 Interactive Design Techniques

Newark, NJ  
Sept 2019-  
present

### UNIVERSITY OF CENTRAL FLORIDA

Courtesy Faculty, College of Nursing  
Postdoctoral Researcher with Professor Gregory Welch  
Focusing on Healthcare Simulation using Virtual and Augmented Reality

Orlando, FL  
Oct 2019  
Jan 2019-  
Aug 2019

## EDUCATION

### UNIVERSITY OF CENTRAL FLORIDA, College of Engineering

PhD in Modeling & Simulation, College of Engineering and Computer Science (Dec 2018)  
Dissertation title “Physical-Virtual Patient Simulators: Bringing Tangible Humanity to Simulated Patients”. Defended on 25 Oct 2018. Advisor Prof. Gregory Welch. Committee members: Prof. Juan Cendan, Prof. Laura Gonzalez, Prof. Michael Proctor.

Orlando, FL  
Aug 2013-  
Dec 2018

<https://sreal.ucf.edu/salam-daher-defended-her-phd-in-modeling-and-simulation-on-oct-25-2018/>

- Graduate Research Assistant at the SREAL lab working on mixed reality simulators for healthcare training. Areas of interest include but not limited to: Synthetic environments, 3D characters (agents /avatars), facial expressions (FACS), body language, simulation & training, healthcare simulation, augmented, virtual and mixed reality.
- Nominated by the School of Modeling and Simulation and selected by the College of Graduate Studies for the Outstanding Dissertation Award (each college selects one PhD graduate. UCF had 13 colleges).
- Nominated by the School of Modeling and Simulation for the most prestigious award at UCF, the Order of Pegasus 2019 Award.
- NCWIT 2018 collegiate scholarship award winner (4 winners out of 147 graduate and undergraduate students in the STEM fields who applied from 91 two to four-year colleges in the USA).
- Recipient of the 2017 RADM Fred Lewis Postgraduate I/ITSEC Scholarship at the Doctoral Level (given to 3 PhD students in STEM)
- Recipient of IEEE VR 2017 Doctoral Consortium Fellowship (1 in 12 around the world) to present my research.
- Recipient of the Link Fellowship for Modeling and simulation (academic year 2016-2017). This merit-based fellowship is awarded to 4 people in the USA.
- Recipient of the Modeling & Simulation assistantship for 3 years in a row

- GPA 4.0/4.0

**UNIVERSITY OF CENTRAL FLORIDA, College of Engineering**  
MS in Modeling and Simulation (Dec 2015)  
GPA 4.0/4.0

Orlando, FL  
Dec 2015

**UNIVERSITY OF FLORIDA, College of Engineering**  
MS in Digital Arts & Science

Gainesville, FL  
December 2006

- Concentration in computer graphics, 3D modeling and simulation, virtual environments, aesthetic computing, artificial intelligence & video games.
- GPA 3.80/4.0 (High Distinction)

**LEBANESE AMERICAN UNIVERSITY**

Byblos, Lebanon  
July 2004

BS in Computer Science with minor in Mathematics

- Recipient of the Rhoda Orme Award presented to an individual to honor her outstanding spirit of devotion, objectiveness, tolerance and services regardless of recognition.
- Recipient of Merit Based scholarship for 9 consecutive semesters
- Awarded membership to the student honor society
- GPA 3.82/4.0 (High Distinction)

## WORK EXPERIENCE

**VCOM3D, INC.**

Orlando, FL  
Jan 2007-2012

*Digital Media Developer (full time for over 5 years. Currently consultant)*

- Lead developer for “Vcommunicator Mobile”, an iPod-based translation device used by the US Army in Iraq.  
<http://www.vcom3d.com/language/instant-translation/>
- Develop gesture libraries, 3D animation, language and cultural content including translations, writing scripts to optimize the work process, testing products, reviewing 3D avatars and quality assurance. (funded by DARPA)
- Develop language & culture real-time training scenarios with 3D avatars.
- Lead the development for creating a FACS coded Facial Expressions Video Reference (funded by NSF)
- As a multilingual digital media developer, liaison for art, linguistics and programming departments and all language subject matter experts.  
<http://salamdaher.net/portfolio/index.php?id=demos>

**UNIVERSITY OF FLORIDA – DIGITAL WORLDS INSTITUTE**

Gainesville, FL  
2005

*Software Developer & 3D Modeler (fall/ spring part time. summer full time)*

**University of Florida Campus Model:** Developed, modeled & optimized a real-time virtual 3D campus model using C++, Presagis Vega Prime & 3D studio MAX. The aerospace department uses the model to simulate flying micro air vehicles on campus.

**UNIVERSITY OF FLORIDA – COLLEGE OF ARCHITECTURE**

Gainesville, FL  
Summer 2006

*Software Developer (part time)*

**College of Architecture Urban City:** Developed generic software that helps the college of architecture students and professors load any 3D model and use interaction to navigate, manipulate and simulate buildings over time. Technology used: C++ & Presagis Vega Prime.

**INDEPENDENT PROJECT: ACCIDENT RECONSTRUCTION**

Gainesville, FL

**Accident reconstruction:** Accurately modeled, reconstructed and simulated an accident and the environment in 3D given the facts from the police report and physics data (speed, acceleration, time of day, lighting, type of truck, camera position...etc.). The simulation includes 3D character, car and the same environment of the accident. Lawyers used simulation during the mediation. December 2005 (worked remotely from Lebanon)

**LEBANESE AMERICAN UNIVERSITY**

*3D Modeler and Designer (fall and spring part time. summer full time)*  
Modeled a 3D virtual campus tour and a 3D character using 3D studio MAX and Flash script. The CD was commissioned by the admissions office for new student orientation.

*Graphic designer*

Designed the university year books, calendars and various posters.

*Audio Video Assistant*

Helped students to learn video editing and multimedia software (Adobe Premiere, Adobe Photoshop, 3D studio max) and hardware equipment

Byblos, Lebanon  
2001

2002-2004

2000

**RESEARCH  
EXPERIENCE**

**UNIVERSITY OF CENTRAL FLORIDA**

*Postdoctoral Scholar at the SREAL lab*

*Graduate Research Assistant, SREAL lab*

Exploring the effects of manipulating sensory cues on perceptions and performance during an interaction with a human surrogate in mixed reality environment. The work involves designing a study, getting IRB approval, software and hardware development of apparatus, running participants, collecting and analyzing data, writing papers and presentations.

*Graduate Research Assistant, METIL lab*

Developed interactive 3D web applications for iBooks.

Researched and implemented a method to simultaneously trigger 18 cameras using CHDK for photogrammetry.

*Independent research*

Researching development of anatomical muscles modeling. Developed a realistic 3D virtual head for myself with anatomically correct facial muscles using FACS for training. (development time more than 700 hours)

**UNIVERSITY OF FLORIDA**

*Virtual Environment Project*

**Space Mission Ride:** Designed and developed a virtual 3D space mission ride using C++, Presagis (Multigen Paradigm) Vega Prime and 3D studio MAX. The Digital Worlds Institute at UF acquired the project for demos and research. The project was on the main webpage of CISE department for over a year. For more information please check <http://plaza.ufl.edu/sallouma/spacemission/>

Orlando, FL  
Jan-Aug 2019  
2014-2018

2013-2014

2013-2014

Gainesville, FL  
2005-2006

**PRESENTATIONS UNIVERSITY OF CENTRAL FLORIDA**

<i>Panel at INACSL 2019</i>	Phoenix, AZ Jun 2019
Title “Vera Real: Stroke assessment using a Physical Virtual Patient (PVP)” Presenters: Laura Gonzalez, Salam Daher, Gregory Welch	
<i>Symposium at INACSL 2019</i>	Phoenix, Az Jun 2019
Title “Virtual/augmented reality for health professions education symposium” Presenters: Michelle Aebersold, Salam Daher, Cynthia Foronda, Jone Tiffany, Margaret Verkuyl	
<i>National Center for Women in Infomration Technology 2019</i> Collegiate Fireside Chat	Orlando, FL May 2019
As a national award winner, I was invited to a panel share my expereince with NCWIT winners at the high school levels	
<i>Poster at IEEE VR 2019</i>	Osaka, Japan March 2019
Presented poster titled “Matching vs. Non-Matching Visuals and Shape for Embodied Virtual Healthcare Agents” at IEEE VR 2019 in Osaka, Japan	
<i>Otronicon 2019 at the Orlando Science Center</i>	Orlando, FL Jan 2019
Presented a Tech Talk about healthcare simulation titled “Patient Simulators: the Past, Present, and Future”	
<i>ACM Intelligent Virtual Agent</i>	Sydney, Australia Nov 2018
Presented 2 papers during the conference “A Systematic Survey of 15 Years of User Studies Published in the Intelligent Virtual Agents Conference” and “Physical-Virtual Agents for Healthcare Simulation”	
<i>IEEE VR 2017 Doctoral Consortium Presentation</i>	Los Angeles, CA, Spring 2017
Presented my research “Optical see-through vs. spatial augmented reality simulators for medical applications” at IEEE VR 2017 in Los Angeles CA to experts in the field of virtual/augmented reality.	
<i>Video Editing Workshop Instructor</i>	Orlando, FL Summer 2014
Prepared and taught a video editing workshop using Adobe Premiere for the PhD students in the SREAL lab to help making supporting videos for the papers submitted to IEEE VR2015.	
<i>Guest Lecturer for EIN6645</i>	Orlando, FL Spring 2015
Guest lecturer for EIN 6645 (realtime simulation agents) for 3 lectures using Maya and Unity3D (total of 9 hours). This course is taught by Dr. Michael Proctor, as part of the class guest lecturers demonstrate softwares needed in the pipeline of 3D character modeling for simulation. This opportunity is only offered to top PhD students.	
	Orlando, FL

*Guest Speaker for SimTalk at College of Nursing* Fall 2015  
 Presented the talk “Healthcare Simulation through History” at the College of Nursing.  
<http://salamdaher.net/UCF/dissertation/healthcareSimulators/timeline.html>

**TEACHING EXPERIENCE**

**NEW JERSEY INSTITUTE OF TECHNOLOGY** Newark, NJ  
*Assistant professor* 2019 - present

Instructor for “IT201: Information Design Techniques”  
 Responsibilities include preparing and preparing and presenting lectures, designing exams, supporting students, coaching the teaching assistant, grading projects and exams, and providing feedback for students.

**UNIVERSITY OF FLORIDA – CISE DEPARTMENT** Gainesville, FL  
*Lecturer* 2005-2006

Prepared lectures, taught, graded projects, administered & corrected exams for “CAP3020: Theory & Practice of Multimedia Production” and “CGS2032: Math, Art & Computing”.

**LEBANESE AMERICAN UNIVERSITY** Byblos, Lebanon  
*Teaching Assistant: Artificial Intelligence & Database Systems* 2004

Corrected, prepared projects, helped students understand the material & administered exams. Supervisor: Dr. Munjid Mussalem

*Physics Lab instructor for Electricity & Magnetism and for Mechanics lab* 2001-2003  
 Prepared experiments and material for students, taught the lab, corrected lab reports, prepared administered and corrected exams & quizzes. Supervisors: Dr. Mars Semman & Dr. Michel Khury

**LEBANESE AMERICAN LANGUAGE CENTER** Byblos, Lebanon  
*Instructor for technical computer courses* 2001-2004

Prepared & explained lectures, prepared & corrected exercises and projects for the following course subjects: Adobe Photoshop, Adobe premiere Corel Draw, Quark X press, Auto CAD, 3D studio MAX & Macromedia Flash

**HONORS & AWARDS**

**UNIVERSITY OF CENTRAL FLORIDA**

- Nominated by the School of Modeling and Simulation and selected by the College of Graduate Studies for the Outstanding Dissertation Award (each college selects one PhD graduate. UCF had 13 colleges). 2019
- Nominated by the School of Modeling and Simulation for the UCF Order of Pegasus 2019 Award 2018
- Recipient of the NCWIT collegiate scholarship 2018 (1 of 4 national winners. 147 students applied from 91 colleges in the USA). 2018
- Recipient of the 2017 RADM Fred Lewis Postgraduate I/ITSEC Scholarship at the Doctoral Level (1 or 3 winners at the PhD Level). 2017
- Recipient of IEEE VR 2017 Doctoral Consortium Fellowship (1 in 12 around the world) to present my research. 2017
- Recipient of the Link Fellowship for Modeling and simulation (academic year 2016-2017). This merit-based fellowship is awarded to 4 people in the USA. 2016-2017
- Recipient of the Modeling & Simulation Assistantship for 3 consecutive years at University of Central Florida. 2013-2016

## LEBANESE AMERICAN UNIVERSITY

Byblos, Lebanon

- Recipient of the Rhoda Orme Award presented to an individual to honor her outstanding spirit of devotion, objectiveness, tolerance and services regardless of recognition.
- Recipient of Merit Based scholarship for 9 consecutive semesters

## HIGH SCHOOL and EARLIER

Awarded 1st prize in designing a stamp for Byblos municipality that represents the cultural and historical heritage of the city.

Byblos, Lebanon  
2000

Awarded 1st place in a nationwide drawing competition for all students in Lebanon

Lebanon  
1997

Awarded 2nd place in Byblos Bank drawing competition among all schools in Byblos

Byblos, Lebanon  
1994

Awarded the 1st prize in a drawing competition for a Lebanese local charity organization for kids "Auxilia".

Byblos, Lebanon  
1993

Awarded 10<sup>th</sup> place in the Fabriano nationwide drawing competition.

Lebanon

Thousands of students in Lebanon participate in this yearly event

1991

## PUBLICATIONS

### Conference Paper (in Proceedings)

Title: Analysis of Peripheral Vision and Vibrotactile Feedback During Proximal Search Tasks with Dynamic Virtual Entities in Augmented Reality  
Authors: Kendra Richards; Nikhil Mahalanobis; Kangsoo Kim; Ryan Schubert; Myungho Lee; Salam Daher; Nahal Norouzi; Jason Hochreiter; Gerd Bruder; Gregory F. Welch  
Submitted to: Proceedings of the ACM Symposium on Spatial User Interaction (SUI)

Oct 2019

### Journal Paper (published)

Title: Neurological Assessment Using a Physical-Virtual Patient (PVP).  
Authors: Laura Gonzalez, Salam Daher, Gregory Welch  
Submitted to: Simulation and Gaming  
Type: Journal paper

Aug 2020

### Poster Abstract (Published)

Title: Matching vs. Non-Matching Visuals and Shape for Embodied Virtual Healthcare Agents  
Authors: Salam Daher, Jason Hochreiter, Ryan Schubert, Gerd Bruder, Laura Gonzalez, Juan Cendan, Mindi Anderson, Desiree A. Diaz, Gregory F Welch  
Submitted to: IEEE VR 2019  
Type: Conference Poster

Osaka, Japan  
March 2019

### Journal Paper (published)

Title: Physical-Virtual Patient: A new patient simulator  
Authors: Salam Daher, Jason Hochreiter, Ryan Schubert, Laura Gonzalez, Juan Cendan, Mindi Anderson, Desiree A. Diaz, Gregory F Welch  
Submitted to: Society of Simulation in Healthcare Journal  
Type: Journal Paper

April 2020

### Conference Paper (Published)

Title: A Systematic Survey of 15 Years of User Studies Published in the Intelligent Virtual Agents Conference

Sydney, Australia  
Nov 2018

Authors: Nahal Norouzi, Kangsoo Kim, Jason Hochreiter, Myungho Lee,  
Salam Daher, Gerd Bruder and Gregory Welch  
Submitted to: IVA 2018  
Type: Conference Paper

**Conference Paper  
(Published)**

Title: Touch-Aware Intelligent Physical-Virtual Agents for Healthcare  
Simulation  
Authors: Salam Daher, Laura Gonzalez, Jason Hochreiter, Nahal Norouzi,  
Gerd Bruder, Greg Welch  
Submitted to: IVA 2018  
Type: Conference Paper

Sydney, Australia  
Nov 2018

**Conference Paper  
(Published)**

Title: Cognitive and Touch Performance Effects of Mismatched 3D Physical  
and Visual Perceptions  
Authors: Jason Hochreiter, Salam Daher, Gerd Bruder, Gregory Welch  
Submitted to: IEEE VR 2018  
Type: Conference Paper

Germany  
Mar 2018

**Conference Paper  
(Published)**

Title: Effects of Social Priming on Social Presence with Intelligent Virtual  
Agents  
Authors: Salam Daher, Kangsoo Kim, Myungho Lee, Ryan Schubert, Gerd  
Bruder, Jeremy Bailenson, Gregory Welch.  
Submitted to: IVA 2017  
Type: Conference Paper

Stockholm,  
Sweden  
April 2017

**Short Article  
(Published)**

Title: Physical-Virtual Patient Head  
Author: Salam Daher, Laura Gonzalez, Gregory Welch  
Submitted to: Florida Nurses Association. September 2017 issue.  
Type: Short Article

September 2017

**Doctoral  
Consortium  
Presentation and  
Poster Abstract  
(Published)**

Title: Optical See-Through vs. Spatial Augmented Reality  
Simulators for Medical Applications  
Author: Salam Daher  
Submitted to: IEEE VR 2017  
Type: Conference Presentation and Poster

Los Angeles, CA  
Mar 2017

**Poster Abstract  
(Published)**

Title: Can Social Presence be Contagious? Effects of Social Presence  
Priming on Interaction with Virtual Humans.  
Authors: Salam Daher, Kangsoo Kim, Myungho Lee, Gerd Bruder, Ryan  
Schubert, Jeremy Bailenson, Greg Welch  
Submitted to: 3DUI 2017, Los Angeles – CA  
Type: Conference Poster

Los Angeles, CA  
Mar 2017

**Journal Paper  
(Published)**

Title: HuSIS: A Dedicated Space for Studying Human Interactions  
Authors: R. Schubert and G. Welch and S. Daher and A. Rajj  
Submitted to: IEEE Computer Graphics and Applications  
Type: Journal Paper

Nov 2016

<b>Conference Paper (Published)</b>	<p>Title: Touch sensing on non-parametric rear-projection surfaces: A physical-virtual head for hands-on healthcare training.          Authors: Jason Hochreiter, Salam Daher, Arjun Nagendran, Laura Gonzalez, Greg Welch.          Submitted to: IEEE Virtual Reality 2015          Type: Conference Paper</p>	<p>Arles, France          Mar 2015</p>
<b>Electronic Poster (Presented)</b>	<p>Title: Preliminary Assessment of Neurologic Symptomatology Using an Interactive Physical-Virtual Head with Touch.          Authors: Salam Daher, Laura Gonzalez, Greg Welch          Submitted to: IMSH 2016          Type: Electronic Poster</p>	<p>San Diego, CA          Jan 2016</p>
<b>Poster Abstract (Published)</b>	<p>Title: "Exploring Social Presence Transfer in Real-Virtual Human Interaction"          Authors: Salam Daher, Kangsoo Kim, Myungho Lee, Andrew Raij, Ryan Schubert, Jeremy Bailenson, Greg Welch          Submitted to: IEEE VR 2016, Greenville, NC          Type: Poster Abstract</p>	<p>Greenville, SC          Mar 2016</p>
<b>Conference Paper (Published)</b>	<p>Title: "The Wobbly Table: The Effects of Mediated Touch on Real-Virtual Human Interaction".          Authors: Myungho Lee, Kangsoo Kim, Salam Daher, Andrew Raij, Jeremy Bailenson, Greg Welch.          Submitted to: IEEE VR 2016, Greenville, NC          Type: Conference Paper</p>	<p>Greenville, SC          Mar 2016</p>
<b>Journal Paper (Published)</b>	<p>Title: "Optical Touch Sensing on Non-Parametric Rear-Projection Surfaces for Interactive Physical-Virtual Experiences"          Authors: Jason Hochreiter, Salam Daher, Arjun Nagendran, Laura Gonzalez, Greg Welch          Submitted to: Presence Journal          Type: Journal Paper</p>	<p>2016</p>
<b>Mini-presentation (Presented)</b>	<p>Title: Humanikins: Humanity Transfer to Physical Manikins          Presenters: Salam Daher, Greg Welch          Submitted to: NextMed / MMVR          Type: mini-presentation</p>	<p>Los Angeles          April 2016</p>
<b>Mini-presentation (Presented)</b>	<p>Title: Physical-Virtual Patient Simulators          Presenters: Greg Welch, Salam Daher, Jason Hochreiter, Laura Gaonzalez          Submitted to: NextMed / MMVR          Type: mini-presentation</p>	<p>Los Angeles          April 2016</p>
<b>Symposium (Presented)</b>	<p>Title: "BSN Assessment of Discrete Neurology Symptoms Using an Interactive Physical Virtual Head"          Presenters: Laura Gonzalez, Greg Welch, Salam Daher          Submitted to: INACSL          Type: Panel Presentation</p>	<p>Grapevine, TX          June 2016</p>



<b>CERTIFICATIONS</b>	<b>TRAINING SIMULATION CERTIFICATE (Summer 2015)</b>	Orlando FL Aug 2015
	<b>FACS CERTIFIED</b> Trained and Certified in Facial Action Coding System	Miami, FL February 2011
	<b>PRESAGIS , INC</b> Certificate of course completion for Vega Prime Certificate of course completion for Creator and Terrain Studio	2006 Plano, TX Santa Clara, CA
<b>PROFESSIONAL ACTIVITIES &amp; AFFILIATIONS</b>	<b>Conferences Attended / Planning to Attend</b> INACSL 2019 ACM IVA (Sydney Australia, 2018) IEEE VR (Arles France 2015, Los Angeles 2017, Osaka Japan 2019) IMSH (New Orleans 2015, San Diego 2016, Orlando 2017) ACM MM (Orlando 2014) IITSEC (Orlando 2007 – 2016)	2007-2019
<b>COMPUTER SKILLS</b>	<ul style="list-style-type: none"> <li>• Java, Java 3D, Javascript, C++, OpenGL, C#, Matlab, Lisp, SQL, Postgres SQL, Objective C and iPhone app development, Xcode, HTML 5, CSS, Ruby on Rails, Git, Github, Microsoft Visual Studio, Eclipse, Processing, Arduino, CHDK, LaTeX, iBooks widgets.</li> <li>• Autodesk 3D studio MAX &amp; Max script, Maya (Mel &amp; Python), Auto CAD 2D/3D, Unity3D &amp; shaders, Cinema 4D, Blender 3D, Poser, Vcommunicator Studio &amp; Gesture Builder, Presagis Vega Prime, Creator, Terrain studio, FlightSIM and STAGE, Boston Dynamics DIGuy, Simio, DIS/HLA.</li> <li>• Adobe Photoshop, Illustrator, Flash &amp; Director. Corel Draw&amp; Painter Classic. Quark-X-Press.</li> <li>• Video and Audio recording &amp; Editing (Adobe Premiere, GoldWave, Audacity).</li> </ul> <p>Windows PC, Macintosh &amp; Linux user and developer.</p>	
<b>LANGUAGES</b>	<p>Fluently reads, writes &amp; speaks English, French &amp; Arabic (Lebanese) and easily adaptable to different Arabic and French accents.</p> <p>Learning American Sign Language, knows the ASL alphabet and few hundreds basic signs that enables me to communicate with deaf people.</p>	
<b>ADDITIONAL EXPERIENCE</b>	<ul style="list-style-type: none"> <li>• Reviewer: IEEE VR 2019 and 2018</li> <li>• Volunteer: Student Volunteer IEEE VR2016</li> <li>• Volunteer: Web Chair for IEEE VR2016</li> <li>• Volunteer: Technical director for graphics, audio and video for a local Orlando dance studio</li> <li>• Videography and video editing for dance performance shows (Orlando, FL)</li> <li>• Photographer for dance performance shows (Orlando, FL)</li> <li>• Vice president of the Lebanese American Society at UF during which I organized the traditional “Lebanese soiree” for more than 500 people as well as other cultural events (2004). Elected as the Most Active Member of the IEEE in the Lebanese American University (2001).</li> </ul>	

\*\*\* *Academic Transcripts, recommendations and portfolio details available upon request.* \*\*\*

<http://salamdaher.com/portfolio/>

<https://www.linkedin.com/in/salamdaher/>

\*\*\* *US Citizen* \*\*\*