

Robert F. Dickerson

Graduate Student

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Selected Projects

AlarmNET

2008-now

Description: The project involves building an emplaced sensor system for remote monitoring of the elderly. Special focus is on detecting and screening for Clinical Depression and Alzheimer's using data mining or expert system rulebases.

Contributions: Built the database system (MySQL), activity recognition modules (JAVA), interface code for the X10 sensors, and touchscreen interfaces (ActionScript) for caregivers and patients.

Supervisor: John A. Stankovic (Professor) University of Virginia

StreamLab

2007-2008

Description: Creating sensor applications can be difficult, so we built a visual programming system for mashing up sensor streams to be published or subscribed from various web services using the StreamFeeds protocol.

Contributions: Developed and tested the StreamFeeds protocol, similar to RSS but for sensor network data. User interface is AJAX application (JavaScript client + PHP backend).

Supervisor: Kamin Whitehouse (Professor) University of Virginia

Augmented Reality for Urban Skills Training 2006

Description: Augmented reality system for live training for military operations in Urban Terrains.

Contributions: Responsible for graphics programming (C++ with Delta3D engine), character animation (3DsMAX). User study run at Quantico Marine Base measuring physiological signals while in the simulation.

Supervisor: Dennis Brown (Research Scientist) U.S. Naval Research Lab

Virtual Patients

2003-2006

Description: Researching developing experiences with virtual humans to provide healthcare students, professionals, and the general public with communication skills education.

Responsibilities: Developed the Natural Language Processing system and medical history database (C++ using WordNET). Integration of speech recognition API (Dragon NaturalSpeaking). Ran user studies on medical students, and collaborated with medical educators to build scenarios.

Supervisor: Benjamin Lok (Professor) University of Virginia

Employment

Intern, Mixed and Virtual Reality Lab
U.S. Naval Research Lab

Summer 2006

Education

Ph.D. in Computer Science

expected August 2012

adviser: John A. Stankovic

Master of Computer Science

August 2008

University of Virginia

GPA: 3.8/4.0

B.S. in Computer Engineering

May 2006

University of Florida

GPA: 3.3/4.0

Interests

- Machine Learning
- Web Applications
- User Interfaces
- Ubiquitous Computing

Skills

Environments: GNU/Linux, Mac OS X

Languages: Python, JAVA, JavaScript, C/C++, Objective-C, MATLAB, PHP

Design: Photoshop, InDesign, Illustrator, Fireworks, Flash, CSS

Publications

Dickerson, R., Gorlin, G., Stankovic, J. "Empath: a Continuous Remote Emotional Health Monitoring System for Depressive Illness", In Proceedings of Wireless Health 2011

Hoque, E., **Dickerson, R.**, Stankovic, J, Monitoring Quantity and Quality of Sleeping using WISPs, In Proceedings of Wireless Health 2010

Dickerson, R., Lu, J., Lu, J., Whitehouse, K. Stream Feeds - An Abstraction for the World Wide Sensor Web in Proceedings of Internet of Things 2008 (25% acceptance rate).

Brown, D., Stripling, R., Plueger, K.C., **Dickerson, R.**, Kotranza, A., "Evaluating Augmented Reality for Urban Skills Training" in Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2007

Raij, A, Johnsen, K, **Dickerson, R.**, Lok, B., Cohen, M., Stevens, A., Bernard, T., Oxendine, C., Wagner, P., Lind, D "Interpersonal Scenarios: Virtual \approx Real?" in IEEE Virtual Reality 2006 (26% acceptance rate).

Dickerson, R., Johnsen, K., Raij, A., Lok, B., Stevens, A., Bernard, T., and D. Lind "Virtual Patients: Assessment of Synthesized Versus Recorded Speech" in Medicine Meets Virtual Reality 14 2006

Dickerson, R., Johnsen, K., Raij, A., Lok, B., Hernandez, J., Stevens, A., and D. Lind. (2005). "Evaluating a Script-Based Approach to Simulating Patient-Doctor Interaction," SCS 2005 International Conference on Human-Computer Interface Advances for Modeling and Simulating (SIMCHI '05)

Johnsen, K., **Dickerson, R.**, Raij, A., Lok, B., Jackson, J., Shin, M., Hernandez, J., Stevens, A., and D. Lind. "Experiences in Using Immersive Virtual Characters to Educate Medical Communication Skills" IEEE Virtual Reality 2005 (26% acceptance rate)

Demos and Posters

Dickerson, R., Hnat, T., Hoque, E., Stankovic, J. "Demonstration of Sleep Monitoring and Caregiver Displays for Depression Monitoring". Wireless Health 2011

Dickerson, R., Jiakang Lu, Jingyuan Li, Billy Chantree, Jian Lu, John A. Stankovic, Kamin Whitehouse. "MetroNet: Case Study for Collaborative Data Sharing on the World Wide Web". The Seventh International Conference on Information Processing in Sensor Networks, 2007 (IPSN '07).

Awards/Honors

National Science Foundation Graduate Fellowship
Honorable Mention (2006)

Florida Bright Futures Scholarship (2001)
100% tuition + stipend for 4 years

University Scholars Program (2004 and 2005)
\$5000 undergraduate scholarship to do summer research

Interests and Hobbies

Swing Dancing - 10+ years. Instructor of LindyHop, Balboa, and Charleston. Co-founded a non-profit business, SwingCville. Organized national level events, Lindustrial Revolution (2-yrs) and College of Swingology with \$7000+ budgets. Won numerous Jack and Jill competitions.

Art - Preferred mediums: drawing, digital painting, pastel, and 3D Computer Animation. See website for my portfolio.

References

John A. Stankovic , Ph.D.

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Dennis Brown, M.S.

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Benjamin C. Lok, Ph.D.

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