

# STJEPAN RAJKO

## I. Education

M.F.A. Dance GPA: 3.9/4.00	Arizona State University	Aug 2006-present
Ph.D. Computer Science (concentration in Arts, Media, and Engineering) GPA: 3.9/4.00	Arizona State University	Aug 2004-present
M.S. Computer Science GPA: 3.93/4.00	Iowa State University	Aug 2001-Dec 2003
B.S. Computer Science, Mathematics GPA: 3.97/4.00	Iowa State University	Fall 1998-May 2002

(first year of M.S. program taken concurrently with last year of B.S. program, M.S. degree awarded in May 2004)

## II. Leadership Experience

Vice-President, Arts, Media and Engineering Student Association	Aug 2007-present
Founder and president, <i>artVERGE, an interdisciplinary arts student organization</i>	Jul 2005-May 2007
Assembly Representative for Interdisciplinary Studies <i>Graduate and Professional Student Association</i>	Aug 2005-May 2006

## III. Research and Development experience

Research Assistant, Enactive Arts group <i>Arts, Media, and Engineering Program, Arizona State University</i>	Aug 2004-present
Research Assistant, Computational Biology and Scientific Computing Laboratory <i>Dept. of Electrical &amp; Computer Engineering, Iowa State University</i>	Aug 2002-May 2004
Software Developer, Reach to Grasp Movements in Cerebellum Patients Project <i>Dept. of Health &amp; Human Performance, Iowa State University</i>	Jan 2004-May 2004
Undergrad. Research Assistant, Geometry, Robotics, and Motion Strategies Laboratory <i>Dept. of Computer Science, Iowa State University</i>	Aug 1999-May 2001

*Systems Support Specialist*

*Dept. of Health and Human Performance, Iowa State University Jan 1999 -- May 2001*

## **IV. Teaching experience**

Teaching Assistant, Computer Org. and Assembly Programming Aug 2007-Dec 2007  
School of Computing Informatics, *Arizona State University* July/Aug 2004

Faculty Advisor

*National Youth Leadership Forum / Technology, San Jose, CA* July/Aug 2004

Teaching Assistant, Algorithms in Computational Biology  
*Dept. of Electrical & Computer Engineering, Iowa State University* Aug 2003-Dec 2003

Instructor, Object Oriented Programming  
*Dept. of Computer Science, Iowa State University* Jan 2002-May 2002

Teaching Assistant, Design and Analysis of Algorithms  
*Dept. of Computer Science, Iowa State University* Aug 2001-Dec 2001

## **V. Grant Activity**

A dynamic pattern recognition algorithm to automatically organize 3-D path data

Timothy R. Derrick, Scott P. McLean and Stjepan Rajko \$23,000.00  
*Peak Performance Technologies, Inc.* 1999

## **VI. Honors and Awards**

### **a. Academic, Research, and Leadership Awards**

Successful Participant, Google Summer of Code Program 2007  
Special Talent Award in Dance 2007  
GPSA Outstanding Service Award 2006  
Graduate Research Excellence Award 2004  
Outstanding Junior scholarship in Computer Science 2000  
Premium for Academic Excellence Award in Computer Science 2001  
Marian Daniells memorial scholarship for outstanding performance in Math. 2000, 2001  
Gertrude Herr Adamson award for creativity in Mathematics 2000

### **b. Academic Competition Results**

Association for Computing Machinery International Collegiate Programming Contest:

*North American North Central region: First place, 1999; Second place, 2000*  
*World finals Twenty-second rank, 2000; Twenty-ninth rank, 2001*  
Iowa Collegiate Mathematics Competition: *First place, 2000; Third place, 2001*

## **VII. Technical Publications**

### **a. Journal Articles**

S. Rajko and S. Aluru, "Space and time optimal parallel sequence alignments," IEEE Transactions on Parallel and Distributed Systems, 2004.

S. Sachs, S. Rajko, and S. M. LaValle, "Visibility-based pursuit-evasion in an unknown planar environment," International Journal of Robotics Research, 2003.

### **b. Refereed Conference Publications**

S. Rajko, G. Qian, "Real-time Automatic Kinematic Model Building for Optical Motion Capture," IEEE Workshop on Human Computer Interaction, 2007.

S. Rajko, G. Qian, T. Ingalls and J. James, "Real-time Gesture Recognition with Minimal Training Requirements and On-line Learning," IEEE Conference on Computer Vision and Pattern Recognition, 2007.

S. Rajko and G. Qian, "A Hybrid HMM/DPA Adaptive Gesture Recognition Method," International Symposium on Visual Computing, 2005.

S. Rajko and G. Qian, "Autonomous real-time model building for optical motion capture," IEEE International Conference on Image Processing, 2005.

S. Rajko and S. Aluru, "Space and time optimal parallel sequence alignment," International Conference on Parallel Processing, 2003.

S. Rajko and S. M. LaValle, "A pursuit-evasion bug algorithm," Proc. IEEE Int'l Conf. on Robotics and Automation, 2001.

## **VIII. Software Development Experience**

### **a. Example Systems Developed**

Motion Analysis and Visualization Engine (MAVE) – a collection of tools developed in conjunction with the research performed for the Arts, Media, and Engineering program at Arizona State University. Developed in C++.

Personal Website (<http://dancinghacker.com/>) – various forms of content and functionality, developed using PHP and MySQL.

Tool for collection and analysis of motion capture data in grasping – created for the Reach to Grasp Movements in Cerebellum Patients Project. Developed in Visual Basic.

Departmental Website (1999-2001) – developed and maintained for the Health and Human Performance Department of Iowa State University. Included HTML/CSS design, back-end database development using ASP and SQL.

## b. Development Proficiency

General Purpose Programming Languages: C, C++, Java, Visual Basic

Website/Database Design: HTML, CSS, PHP, ASP, SQL/MySQL, JavaScript

Visual Programming Environments: MAX/MSP, LabView

# IX. Instruction in Dance

## a. Technique

Modern	Nina Watt (Arizona State University)	2007
	Jen Tsukayama, Shouze Ma (Arizona State University)	2006
	Mary Fitzgerald, Karen Schupp (Arizona State University)	2005
	Lisa Starry (Scorpius Dance Theater, Phoenix, AZ)	2004-2005
	Laurie Sanda, Vernon Windsor, Amy Martin (ISU)	2001-2004
Ballet	Candace Ammerman (Arizona State University)	2005
	Janice Baker, Amy Martin (Iowa State University)	2003-2004
Jazz	Janice Baker, Amy Martin (Iowa State University)	2003-2004
Ballroom	Jennifer Malcolm-McKay, Jill Elgin, Janice Baker (ISU)	2002- 2003
Various	Orchesis I Dance Company, ISU	2001-2004
	Orchesis II Dance Company, ISU	2001-2004
	ACDF, University of Wisconsin, Madison	Spring 2003
	ACDF, University of Utah, Salt Lake City	Spring 2004

## b. Composition

Intermediate	Claudia Murphey, Arizona State University	Fall 2006
Intermediate	Amy Martin, Iowa State University	Fall 2003

# X. Creative Activity

## a. Video Work

<i>Title</i>	<i>Role</i>	<i>Length</i>
Rehearsal Assistant (2005)	director, editor, performer, videographer	~5 min

*(A mock presentation of a computer system intended to help a dance choreographer with the creative process. The computer system is supposed to play music, record and playback video through gestural commands executed from the stage.)*

Plie in Three Variations (2004) director, editor, performer ~4 min

*(A humorous comparison of three dance styles (modern, ballet, and jazz) through a single movement – the plie, or the bending of the knees.)*

## b. Choreography

<i>Title</i>	<i>Music</i>	<i># dancers</i>	<i>Location</i>	<i>Length</i>
To be decided at the time of performance (2004)		9	Tempe, AZ	~10 min
<i>(This is an interactive performance work which explores a connection between the audience, a commentator, a visual artist, and the dance performers. The audience gets to decide what the topic of the performance will be, the visual artist and the performers improvise material inspired by the topic, and the commentator conveys to the audience how what they are seeing relates to what they requested.)</i>				
Unreal (2004)	The Prodigy	7	Ames, IA	~7 min
<i>(The dance is based on bending of reality, with the dancers enveloping the audience in surreal imagery, recurring dream-like sequences, and ultimate loss of control when the dancers finally rush the audience, taking them further into the experience.)</i>				
Solo for Tribes (2003)	The Prodigy	1	Ames, IA	~4 min
<i>(The solo introduced my character in this work directed by Valerie Williams. The character could be described as a drunkard and a wastrel but with potential, and the movement tried to reflect this.)</i>				
Silhouettes (2003)	Pips, Chips & Videoclips	10	Ames, IA	~5 min
<i>(Performed in a small space with a thrust stage, the majority of the dance happens in the isles around the audience. The all-female cast wears masks and performs sensual, smooth movements, with the floor patterns somewhat reminiscent of a catwalk.)</i>				
Dominate (2002)	St. Germain	8	Ames, IA	~5 min
<i>(This performance explores the connection between martial arts and dance, with the movement mainly inspired by various martial arts.)</i>				

## c. Performance

Arizona State University	2004-2007
Scorpius Dance Company	2005-2007
Iowa State University	2001-2003

<u>2003</u>	<u>Choreographer</u>	<u>Music</u>	<u>Location</u>	<u>Length</u>
Tribes	Valerie Williams et al.	Various	Ames, IA	~1 hr
Air and Amor	Valerie Williams	Bob Reselman	Ames, IA	~1 hr
Continuum	Curt Anthon	Curt Anthon	Ames, IA	~7 min
Untitled	Beth Danowski	Snatch sndtrk.	Ames, IA	~6 min
Metamorphosis	Cassie Bonnett	Zade	Ames, IA	~5 min
Between 7 P.M. and 2 A.M.	Sarah Hauss	Antonio Jobim, Cesaria Evora	Ames, IA	~13 min
The Game of Mine	Janice Baker	The Klezematics	Ames, IA	~6 min
Amalgamation	Ashley Miller	Moby	Ames, IA	~5 min
The Proud	Kirsten Peters	Audioslave	Ames, IA	~5 min
Equilibrium	Acacia Fagundes Oliveira	Brazilian popular	Ames, IA	~5 min
How to Make an Entrance	Amy Martin	Jesse Manno	Ames, IA	~6 min
Can You Hear Me Now?	Amy Weishaar	Spoken word	Ames, IA	~6 min
Contact	Dawnielle Brown	Moulin Rouge snd.	Ames, IA	~5 min
Rapture	Paul Barnes	Bond	Ames, IA	~5 min
<u>2002</u>	<u>Choreographer</u>	<u>Music</u>	<u>Location</u>	<u>Length</u>
Through a Door	Vernon Windsor	Paul Halley et al.	Ames, IA	~10 min
Take Breath	Demian Willette		Ames, IA	~6 min
Communication Lesson	Teresa Swanson	Radiohead	Ames, IA	~5 min
Sinai	Sophia Magill	Safari Sound Band	Ames, IA	~5 min
Walkabout	Vernon Windsor	David Hudson	Ames, IA	~6 min
Madrigal Dinner	Valerie Williams	Period music	Ames, IA	~30 min
<u>2001</u>	<u>Choreographer</u>	<u>Music</u>	<u>Location</u>	<u>Length</u>
Peep Show	Janice Baker	Cat Blues	Ames, IA	~4 min
Field Day	Laurie Sanda	Karl Jenkins	Ames, IA	~5 min
Dance no Evil	Janice Baker	Mushroom Hunting	Ames, IA	~5 min