

Gholamreza Amayeh

Ph.D. Candidate and Research Assistant
 Department of Computer Science and Engineering (Mail Stop 171)
 University of Nevada, Reno, NV 89557 USA

E-mail: amayeh@cse.unr.edu
 URL: <http://www.cse.unr.edu/~amayeh>
 Cell: +1 775 636 4626

EDUCATION

| | | |
|--|--|------------------|
| Ph.D. in Computer Science | University of Nevada, Reno | May 2009 |
| Advisor: Prof. George Bebis | | |
| Dissertation: Hand-based Biometric System | | |
| M.S. in Digital Electronics | Sharif University of Technology, Tehran, Iran | Feb. 2004 |
| Advisor: Dr. Esmail Sanai & Dr. Shohreh Kasaei | | |
| Thesis: Content-based Image Retrieval | | |
| B.S. in Electrical Engineering | Sharif University of Technology, Tehran, Iran | Sep. 2001 |
| Advisor: Dr. Bijan Vosoughi-Vahdati & Dr. Shohreh Kasaei | | |
| Thesis: Fingerprint Enhancement | | |

APPOINTMENT

| | | |
|---|--|------------------------------|
| Research Assistant | University of Nevada, Reno | Jan. 2005 – Present |
| <ul style="list-style-type: none"> • Hand-Based Verification/ Identification Systems • Gender Classification using Hand Shape • Computational Analysis of High Order Zernike Moments | | |
| Summer Intern | ObjectVideo, Virginia | Jun 2008 – Sep. 2008 |
| <ul style="list-style-type: none"> • Homography Estimation and Sensor Fusion | | |
| Software Engineer and System Designer | Eimaa Telecommunication Inc., Tehran | Jan. 2004 – Aug. 2004 |
| <ul style="list-style-type: none"> • Design and Implementation of Fast and Efficient Algorithm to Resize GIF Files | | |
| Research Assistant | Sharif University of Technology, Tehran | Sep. 2001 – Feb. 2004 |
| <ul style="list-style-type: none"> • Designing an Operational Fingerprint Identification System • Content-Based Image Retrieval | | |
| Hardware Engineer and System Designer | Maharan Inc., Tehran | May 2000 – Sep. 2000 |
| <ul style="list-style-type: none"> • Designing and Programming a Data Recorder System for Trains. | | |
| Summer Intern | National Research Institute of Iran, Tehran | May 1999 – Sep. 1999 |
| <ul style="list-style-type: none"> • Designing and Implementing a Digital Zero Cross Detector Circuit (Application: Charging a Bank of Capacitors) | | |

TEACHING EXPERIENCE

| | | |
|--|--------------------------------------|------------------------------|
| M.S. Thesis Co-Advisor | Azad University of Arak, Iran | Sep. 2007 – Aug. 2008 |
| <ul style="list-style-type: none"> • Soheil Amayeh | | |
| Thesis: Fingerprint Enhancement in Curve-let Domain Resulting in a publication at the 4 th International Symposium on Visual Computing, Las Vegas (currently a lecturer at Azad University of Roodehen, Iran) | | |
| Teaching Assistant | University of Nevada, Reno | Jan. 2009 – May 2009 |
| <ul style="list-style-type: none"> • Computer Science II (CS 202) Presenting lectures, Grading assignments, held office hours. | | |
| <ul style="list-style-type: none"> • Image Processing and Interpretation (CS 474/674) Grading assignments. | | |
| Sharif University of Technology, Tehran | | |

- Image Processing Sep. 2003 – Feb. 2004
Presenting lectures, Grading assignments and exams, held office hours.
- Computer Structure and Machine Languages Feb. 2001 – Feb. 2003
Presenting lectures, Grading assignments and exams, held office hours.
- Electronic Laboratory I May 2002 – Sep. 2002
Presenting lectures, Grading assignments and exams, held office hours.

PATENTS

- **"Hand-based Authentication System Using Palm-Finger Segmentation"**, provisional patent, filed on 6/16/2006.
- **"Hand-based Authentication System Using Palm-Finger Segmentation"**, full patent, filed on 6/15/2007.

HONORS AND AWARDS

- | | | |
|--|---|------|
| • Outstanding International Student Award | University of Nevada, Reno | 2008 |
| • Nevada NSF EPSCoR Graduate Research Fellowship | University of Nevada, Reno | 2008 |
| • Nevada NSF EPSCoR Graduate Research Fellowship | University of Nevada, Reno | 2007 |
| • Nevada NSF EPSCoR Graduate Research Fellowship | University of Nevada, Reno | 2006 |
| • Ranked 2 nd Graduate Student in EE Department | Sharif University of Technology, Tehran | 2004 |
| • Merit-based scholarship | Sharif University of Technology, Tehran | 2003 |
| • Ranked 9 th in the Nationwide Graduate EE Olympiad | Iran | 2001 |
| • Ranked Top 1% in the Nationwide Undergrad University Entrance Exam | Iran | 1996 |

AREAS OF EXPERTISE

- Biometrics and Authentication/Recognition Systems
- Computer Vision and Pattern Recognition
- Machine Learning and Machine Intelligence
- Image/Video Processing and Analysis
- Evolutionary Computing and Artificial Intelligence
- Biomedical Imaging

FUNDING

- | | | |
|--|-----------------|----------------------------|
| NSF EPSCoR Grant in Cognitive Information Processing | \$86,000 | Jul. 2006–Dec. 2008 |
| <ul style="list-style-type: none"> • Graduate Student Fellowship (PI: Prof. George Bebis) | | |

ACTIVITIES

Volunteer

- Participating in organizing 1st, 2nd, 3rd and 4th International Symposium on Visual Computing
- Engineer's day event, University of Nevada, Reno, Feb. 2006

Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Journal of Computer Vision and Image Understanding
- Journal of ACM Computing Surveys
- International Conference on Biometrics, 2009
- International Workshop on Combinatorial Image Analysis, 2009
- 13th International Computer Society of Iran Computer Conference, 2008
- 2nd International Symposium on Visual Computing, 2007

PUBLICATION

JOURNAL ARTICLES:

- **Gholamreza Amayeh**, George Bebis, Ali Erol, Mircea Nicolescu, "A Component-Based Approach to Hand Authentication", Computer Vision and Image Understanding. (Accepted Nov 2008)

CONFERENCE PAPERS:

- **Gholamreza Amayeh**, Soheil Amayeh, M.T. Mansuri, "Fingerprint Enhancement in Curve-let Domain", 4th International Symposium on Visual Computing, Las Vegas, NV, December 2008.
- **Gholamreza Amayeh**, George Bebis, Mircea Nicolescu, "Gender Classification from Hand Shapes", IEEE Workshop on Biometrics (in conjunction with CVPR08), Anchorage, Alaska, June 2008.
- **Gholamreza Amayeh**, George Bebis, Ali Erol, Mircea Nicolescu, "A Component-Based Approach to Hand Verification", IEEE Workshop on Biometrics (in conjunction with CVPR07), Minneapolis, Minnesota, June 2007.
- **Gholamreza Amayeh**, George Bebis, Ali Erol, Mircea Nicolescu, "A New Approach to Hand-Based Authentication System", Proceedings of the SPIE Defense and Security Symposium, Orlando, Florida, April 2007.
- **Gholamreza Amayeh**, Shohreh Kasaei, George Bebis, Alireza Tavakkoli, Konstantinos Veropoulos, "Improvements of Zernike Moment Descriptors on Affine Transformed Shapes", IEEE International Symposium on Signal Processing and its Applications (ISSPA07), UAE, February 12-15, 2007.
- **Gholamreza Amayeh**, George Bebis, Ali Erol, and Mircea Nicolescu, "Peg-Free Hand Shape Verification Using High Order Zernike Moments", IEEE Workshop on Biometrics (in conjunction with CVPR06), New York, NY, June 2006.
- **Gholamreza Amayeh**, Ali Erol, George Bebis, and Mircea Nicolescu, "Accurate and Efficient Computation of High Order Zernike Moments", International Symposium on Visual Computing, Lake Tahoe, NV, December 2005.
- Alireza Tavakkoli, **Gholamreza Amayeh** and Shohreh Kasaei, "A Fast VOP Extraction Technique Based on Wavelet and Watershed Segmentation", Proceedings of 12th Iranian Conference on Electrical Engineering, Mashhad (IRAN), May 2004.
- **Gholamreza Amayeh**, Shohreh Kasaei and Alireza Tavakkoli, "A modified algorithm to obtain translation, rotation and scale invariant Zernike moment shape descriptors", International Workshop on Computer Vision, Tehran (IRAN), April 2004.
- Alireza Tavakkoli, Shohreh Kasaei and **Gholamreza Amayeh**, "A Fast and Efficient Video Object Plane Extraction Method based on Watershed Segmentation", International Workshop on Computer Vision, Tehran (IRAN), April 2004.
- Shohreh Kasaei, **Gholamreza Amayeh** and Alireza Tavakkoli, "Fingerprint Authentication", Proceedings, Sharif University of Technology, Tehran (IRAN), 2003.

INVITED PRESENTATION:

- **Gholamreza Amayeh**, George Bebis, Ali Erol, Mircea Nicolescu, "Computation of high order Zernike moments", Cognitive Information Processing EPSCoR State Conference, Reno, Nevada, May 22nd-24th, 2006.

TECHNICAL REPOTS:

- **Gholamreza Amayeh**, "Shape-Based Image Retrieval", M.S. Thesis, Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran, February 2004.
- Shohreh Kasaei, **Gholamreza Amayeh**, Alireza Tavakkoli, "Fingerprint Authentication", Sharif University of Technology, Tehran, Iran, 2003.
- **Gholamreza Amayeh**, "Improving Fingerprint Enhancement using Gabor Filters", B.S. Thesis, Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran, September 2001.

MEMBERSHIPS

- Institute of Electrical and Electronic Engineers (IEEE)
- IEEE Circuit and Systems Society
- IEEE Computer Society

SPECIAL SKILLS

Software Skills:

- C/C++, Visual Studio and Java in Windows/Linux
- MATLAB and Simulink
- Open CV and Open GL

Hardware Skills:

- Z80 and 8080/8086 machine language
- 80x86 Hardware and System Design
- 8x51 (Micro Controller) System Design

| |
|-------------------|
| REFERENCES |
|-------------------|

Dr. George Bebis

Phone +1 (775) 784 – 6463
 Fax +1 (775) 784 – 1877
 Email bebis@cse.unr.edu
 URL <http://www.cse.unr.edu/~bebis>

Dr. Mircea Nicolescu

Phone +1 (775) 784 – 4356
 Fax +1 (775) 784 – 1877
 Email mircea@cse.unr.edu
 URL <http://www.cse.unr.edu/~mircea>

Dr. Monica Nicolescu

Phone +1 (775) 784 – 1687
 Fax +1 (775) 784 – 1877
 Email monica@cse.unr.edu
 URL <http://www.cse.unr.edu/~monica>

Nancy LaTourrette

Phone +1 (775) 784 – 4014
 Fax +1 (775) 784 – 6378
 Email latour@cse.unr.edu
 URL <http://www.cse.unr.edu/~latour/>

Dr. Shohreh Kasaei

Phone +98 (216) 616 – 4631
 Fax +98 (216) 601 – 9246
 Email skasaei@sharif.edu
 URL <http://sharif.edu/~skasaei>

Ph.D. Advisor

Professor
 Department of Computer Science and Engineering
 University of Nevada, Reno, Mail Stop 171
 Reno, Nevada, USA 89557

Computer Vision Lab Co-Director

Assistant Professor
 Department of Computer Science and Engineering
 University of Nevada, Reno, Mail Stop 171
 Reno, Nevada, USA 89557

Robotics Research Lab Director

Assistant Professor
 Department of Computer Science and Engineering
 University of Nevada, Reno, Mail Stop 171
 Reno, Nevada, USA 89557

Manager of Engineering Computing

Lecturer
 Department of Mathematics and Statistics
 University of Nevada, Reno, Mail Stop 171
 Reno, Nevada, USA 89557

M.S. & B.S. Advisor

Associate Professor
 Department of Computer Engineering
 Sharif University of Technology
 Tehran, Iran 11365-9517