Curriculum Vitae

As of April 2015

Applicant Information		
First Name: Jesse	**Middle Name:** Aaron	**Last Name:** Brizzi
Current Address (Street, City, State, Zip): 1 Matt St. Port Jefferson Station, NY 11776		
Personal Website: www.jessebrizzi.com		
Email: jbrizzi@cs.stonybrook.edu	**Phone:** 727-458-2123	
Residency: US Citizen	**Gender:** Male	
Race: Hispanic/ Caucasian	**Disabilities:** None	

Academic Information	
Undergraduate	
Current Education Standing: Senior	**Department:** Computer Science and Engineering
Name of Institution: University of South Florida	
Current Major: Computer Science	
Current Overall GPA: 3.80	**Major GPA:** 3.86
Total Number of Credit Hours Earned to Date: 129	
Expected Gradation Time: May 2014	
Graduate	
Current Education Standing: PhD Student	**Department:** Computer Science
Name of Institution: SUNY Stony Brook	
Current Major: Computer Science	
Specialty: Computer Vision, Affective Computing, Machine Learning	
Current Overall GPA: TBD	
Expected Gradation Time: 2019	

Work History/Internships	
Employer: SMC Software	**Department:** Information Technology
Position: ASP.NET development for an online reservation System. Mostly in ASP.NET version 3.0 and Visual Studio 2008. Company wide computer hardware support and repair.	
Reference and Info: http://smcsoftware.com/index.shtml	
Employment Start: May 2012	**Employment End:** April 2013
Other Info: This started off as a summer internship during the summer of 2012. The owner of the company offered me	

a part time position that I accepted during my Junior year. I left to right before the finials during my Spring 13 semester to focus on school work and my REU.

Fellowships

- **NSF GRFP Fellow** – 2015 to 2018
- **Stony Brook University Turner Fellow** – 2014 to 2019

Publications https://scholar.google.com/citations?user=360hreoAAAAJ&hl=en

- Automatic expression spotting in videos, M Shreve, J Brizzi, S Fefilatyev, T Luguev, D Goldgof, S Sarkar, Image and Vision Computing 32 (8), 476-486
- Optical Flow Based Expression Suppression in Video J Brizzi, D Goldgof, S Sarkar, M Shreve Pattern Recognition (ICPR), 2014 22nd International Conference on, 1817-1821

Certifications

- **CompTIA Network+ Certified –** December 2013
  - https://docs.google.com/a/stonybrook.edu/file/d/0B0vRL7F7C1YiY09yS2JjYkxpc00/edit?usp=drivesdk

Projects/Research

Remote Vital Sign Assessment on Mobile Platforms

A research project completed in conjuncture with Raytheon to develop an Android application that could assess the vital signs of a human being through non contact means using the stock sensors on the smart phone. About 90% of the Code for this group project was developed by me from scratch.

Poster Link: https://www.dropbox.com/s/87xlli2w5gxffe1/Poster.pdf

Video Presentation: https://www.dropbox.com/s/py8bdlebfqfv6a9/RaytheonGroup.wmv

EnVision Magazine (4/13) article: https://www.dropbox.com/s/t90sc8jov0xlqkw/articleEnvisionApril2013.pdf

Student Body Problem Reporter

This project developed a community problem reporter for the android platform. The application would be used by students/community members to quickly report problems to the administration. The application had an accompanied web application for administration work on the reports.

Poster Link: https://www.dropbox.com/s/f83u8kcv7p9thz2/ProblemfinderPoster.pdf

Presentation: https://www.dropbox.com/s/yzk2k0yzg3srqeh/Final%20presentation.pdf

Automatic Expression Spotting in Videos – (Second Author)

In this paper, we propose a novel solution for the problem of segmenting macro- and microexpressions frames (or retrieving the expression intervals) in video sequences, which is a prior step for many expression recognition algorithms. The proposed method exploits the non-rigid facial motion that occurs during facial expressions by capturing the optical strain corresponding to the elastic deformation of facial skin tissue. The method is capable of spotting both macro expressions which are typically associated with expressed emotions and rapid micro- expressions which are typically (but not always) associated with semi-suppressed macro-expressions. We test our algorithm on three datasets, including a newly released hour-long video with two subjects recorded in a natural setting that includes spontaneous facial expressions. We also report results on a dataset that contains 75 feigned macro-expressions and 37 feigned micro-expressions. We achieve over a 75% true positive rate with a 1% false positive rate for macro-expressions, and nearly 80% true positive rate for spotting microexpressions with a .3% false positive rate. For the spontaneous expression dataset, we achieve an average TPR of 68% at roughly a 10% FPR.

M Shreve, J Brizzi, S Fefilatyev, T Luguev, D Goldgof, S Sarkar “Automatic expression spotting in videos” Image and Vision Computing 32 (8), 476-486

Summer NSF REU 2013 – Expression Detection in Infants Through Facial Deformation Performance Analysis

I was accepted into multiple summer REU programs and participated in the one being offered at the University of South Florida. For this project I completed modified the code and technique used in the previous “Automatic Expression Spotting in Videos” project and applied it to an application where we monitor infants in maternity wards, who may not be able to make sufficient noise to alert nursing staff, to see when they are in discomfort or pain and need attending too.

Poster Link: https://www.dropbox.com/s/j4ufgf8idsrmvgz/REUPoster-Brizzi.pdf

Paper Link: https://www.dropbox.com/s/5zn65p4yp9zts16/UMDatasetWriteup.pdf

Honors Thesis – Optical Flow Based Expression Removal in Video Sequences

In this paper we propose a novel method for suppressing facial expressions in video sequences based on analysis of apparent strain in the face. The proposed method performs continuous optical strain analysis on a target face for all frames in a video. This analysis is used in conjunction with strain maps for every frame to counteract the elastic deformation of the facial tissue and keep the expression neutral. The method is capable of suppressing out all expression types without the need of training for specific expressions and is demonstrated on a publicly available data set. In addition, we test our method using publicly available expression (smile) recognition program that is included with OpenCV to quantify the suppression results. Our method shows an average reduction of expression detection confidence, the confidence of an expression present in a single frame, of nearly 90%.

Brizzi, J., Shreve, M., Goldgof, D., Sarkar, S. (2014). Optical Flow Based Expression Suppression in Video. ICPR 2014/IEEEXplore, TBD.

– CAE Inc. - Network Video Streaming Protocol/Library Development

This Project is under a non-disclosure agreement

Additional Information

All math, computing, and networking related Undergrauate courses taken to date.

- MAC 2281,2,3 Engineering Calculus 1,2,3
- COP 3514 Program Design
- EGN 4450 Introduction to Liner Systems
- CDA 3103 Computer Organization
- COP 3331 Object Oriented Design
- COT 3100 Intro to Discrete Structures
- CDA 3201 Computer Logic Design/Lab
- COP 4530 Data Structures
- EGN 3443 Prob & Stat for Engineers
- CIS 4910 Computer Science Project
- CIS 4930 Advanced Python
- COP 4656 S/w Development for Mobile Devices
- COP 4710 Database Design
- COT 4400 Analysis of Algorithms
- CAP 5400 Digittal Image Progessing
- CIS 6930 Seminar in Computer Vision
- CNT 4004 Computer Networks 1
- COT 4115 Advanced Discrete Structures
- CDA 4205 Computer Architecture
- COP 4600 Operating Systems
- CIS 4250 Ethical Issues/Profess Conduct

Programming languages known.

- C
- C++
- Java
- Python
- C#
- HTML
- PL/SQL
- MSSQL
- Javascript
- CSS
- MatLab

SDK's, API's, Libraries, and Programming Environments Expierence.

- Google Maps V3
- Android SDK (API levels 8-17)
- MySQL
- Microsoft SQL Server 2008
- Matlab 2012b – 2013b
- Matlab Computer Vision Toolbox 2012b-2013b
- .NET / ASP.NET (V3-4.5)
- Qt
- openCV
- openBR
- FFTW
- Visual Studio (2008-2012)
- Eclipse Juno
- Git
- Photoshop

Academic activities outside classroom

- I was a member of the USF White Hatters Computer Security Club during my freshman year.
- I was a member of the USF ACM chapter
- I was an Intern at the software company SMC software working in ASP.NET development.

Academic awards & honors.

- Member of the Delta Epsilon Iota Honors fraternity.
- Student in the USF Honors College
- Deans List
- USF Directors Award
- Fl Academic Scholar
- NSF CSE Summer REU Participant

Professional and academic association memberships.

- I was a member of the gamma chi chapter of the Zeta Beta Tau national fraternity.
  - Was a member of the Executive Board, Elected to Vice President of Risk Management.
  - Was Class President for my rush class
  - Held the webmaster, Sargent of arms, and Marketing chair positions.
- I was a member of the Delta Epsilon Iota Honors fraternity.