# LIVIA ZARNESCU YANEZ

Livia.z.yanez@gmail.com | 650.464.6490 | www.github.com/liviaz

## SKILLS

Software
Extensive experience with C, C++, Matlab, Python, R, Labview
Moderate experience with Java, Unix shell scripting, Hadoop, SQL, Javascript

Data analysis
Machine learning and statistics for finding meaning in large, noisy data sets
Image processing and automated image analysis
Statistical signal processing for noise reduction and signal estimation

Hardware
Rapid prototyping: laser cutting, 3D printing, Solidworks
Knowledgeable in optics, electronics and sensors

## EDUCATION

9/10 – 9/16 **Stanford University**, Stanford, CA
Ph.D. Bioengineering, MS in Bioengineering
PhD advisor: David Camarillo, Assistant Professor in Bioengineering
Thesis Title: Baby's first hug: understanding the relationship between embryo biomechanical properties and developmental potential

8/06 – 5/10 **University of Arizona**, Tucson, AZ
B.S. Optical Sciences and Engineering, B.S. Mathematics
*Summa cum laude*

## EMPLOYMENT HISTORY

1/12 – present **Camarillo Lab,** Stanford University
My research focuses on developing smart biomedical devices for automated assessment of embryo developmental potential. I have experience in:

- Device design from early stages of prototyping all the way through to clinical translation
- Writing software for hardware control and data analysis
- Applying methods from statistics and machine learning to make predictions about embryo viability
- Drawing meaningful conclusions from large amounts of sequencing data
- Developing image processing algorithms to automate analysis of embryo imaging data

6/11 – 9/11 **Intelligent Fiber Optic Systems (IFOS)**, Santa Clara, CA
I worked on embedding fiber Bragg grating temperature sensors into thermal protective materials to monitor temperature profiles during re-entry from space.

## AWARDS AND HONORS

9/15 – 6/16 **Siebel Graduate Fellowship**

10/14 **Reviewer's Choice Award** (Biomedical Engineering Society Conference)

5/11 – 5/14 **National Science Foundation Graduate Research Fellowship**

9/10 – 9/15 **Stanford Graduate Fellowship**

## PUBLICATIONS

**L Z Yanez**, D Camarillo. Microfluidic analysis of oocyte and embryo biomechanical properties to improve outcomes in assisted reproductive technologies. *Molecular Human Reproduction*, accepted.

**L Z Yanez**, J Han, B Behr, R Reijo Pera, D Camarillo. Human oocyte developmental potential is predicted by mechanical properties within hours after fertilization. *Nature Communications* 2016.

**L Zarnescu**, M Leung, M Abeyta, H Sudkamp, T Baer, B Behr, AK Ellerbee. Label-free characterization of vitrification-induced morphology changes in single-cell embryos with full-field optical coherence tomography. *Journal of Biomedical Optics* 2015.

**L Zarnescu**, M Abeyta, T Baer, B Behr, AK Ellerbee . Assessment of imaging parameters correlated with the effects of cryopreservation on embryo development. *Proceedings of SPIE* 2014.

L Wu, **L Zarnescu**, V Nangia, B Cam, D Camarillo. A head impact detection system using SVM classification and proximity sensing in an instrumented mouthguard. *IEEE Transactions on Biomedical Engineering* 2014.

## PATENTS

**L Zarnescu**, D Camarillo, J Han, R Reijo Pera, S Chavez, B Behr. Mechanical Biomarkers for Oocyte and Embryo Viability. U.S. Patent No. US9179935 B2, granted 11/10/2015

## RELEVANT COURSEWORK AT STANFORD

**Machine Learning (CS 229)**
**Statistical Signal Processing (EE 278B)**
**Programming Abstractions (CS 106B)**
**Computer Organization and Systems (CS 107)**
**Decision Making Under Uncertainty (CS 238)**
**Image Processing (EE 368)**
**Fourier Transforms (EE 261)**
**Mechanics (ME 333)**
**Cell Mechanics (ME 239)**
**Design and Manufacturing (ME 203)**

## TEACHING AND VOLUNTEER EXPERIENCE

1/10 – 5/15 **Tutor**, Boys and Girls Club, East Palo Alto, CA
Program leader from 2013-2015
Provided SAT tutoring to local low-income high school students

9/11 – 12/11 **Teaching Assistant**, Department of Bioengineering, Stanford University
Class: Molecular and Cellular Bioengineering (BioE 300A)
Professor: Zev Bryant

8/08 – 5/10 **Optics Outreach Program**, University of Arizona
Designed and taught optics lectures and labs in high school physics classes around the Tucson area