Brian Jackson

Stanford University - Palo Alto, CA
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Education

PhD, Stanford University **2017-Present**
Mechanical Engineering Palo Alto, CA

- NSF Graduate Research Fellowship
- Stanford Engineering Full Fellowship

Important Coursework

- CS229 Machine Learning (Fall 2017)
- CS230 Deep Learning (Winter 2018)
- AA228 Decision making Under Uncertainty (Fall 2017)
- AA274 Principles of Robotic Autonomy (Winter 2018)

BS, Brigham Young University **2017**
Mechanical Engineering Provo, UT

- GPA: 3.98 / 4.00
- Capstone Project: BYU Mars Rover
- Magna Cum Laude
- Graduated with Honors
- Honors Thesis: "Resolving Pseudosymmetry in γ-TiAl using Cross-Correlation Electron Backscatter Diffraction with Dynamically Simulation Reference Patterns"

Important Coursework

- Flight Dynamics (2017): Dynamics and control methodology for fixed-wing UAV's
- Robotics (2016): Covered forward and inverse dynamics and kinematics of serial link manipulators
- Design of Control Systems (2016): Application-based linear control class
- Design of Mechatronic Systems (2016): Built an autonomous robot using a PIC24 microcontroller

Professional Positions

Engineering Intern **June 2017–Sep 2017**
Raytheon Missile Systems Tucson, AZ

- Developing full 6 Degree of Freedom simulations for analysis and development of guided bullets
- Used NASA's OTIS trajectory optimization tool to generate first order fin load approximations

Research Assistant **Sep 2014–May 2017**
Brigham Young University Provo, UT

- Advisor: Dr. David Fullwood
- BYU Microstructure of Materials Laboratory
- Developing software in MATLAB for cross-correlation analysis of electron backscatter diffraction (EBSD) patterns
- Leading research in validation of cross-correlation EBSD (CC-EBSD or HR-EBSD)

Teaching Assistant **Sep 2016–April 2017**
Brigham Young University Provo, UT

- Great Questions Essay class: capstone experience of the BYU Honors Program
- Coaching students from all majors and disciplines in writing 15-25 page multidisciplinary essays

Engineering Co-op **May–Aug 2015**

Dana Cedar Park Technology Center Leander, TX

- Analyzed test data and standardized data analysis formats using Matlab and Excel
- Implemented a workflow management system to improve inter-departmental communication, data storage, data analysis, and process control.

Engineering Intern / Metrology Apprentice **Dec 2010–Mar 2011, Apr 2013–Dec 2014**

Fallbrook Technologies Cedar Park, TX

- Created project forecasting tool to improve project communication and resource efficiency
- Developed tools that reduced metrology reporting time by 50%
- Received training and certification on a Carl Zeiss Contura G2 CMM and GD&T ASME Y14.5-2009
- Managed the implementation of 5S, increasing professionalism, efficiency and reducing waste

Support Intern **Jun–Aug 2010**

RailPros. Inc. Irvine, CA

- Compiled documentation and manuals to standardize expectations for company technicians
- Researched buying options for various products in order to save the company money

Engineering Intern **Summers 2008–2009**

LifeModeler Inc. San Clemente, CA

- Researched the effects of various baseball pitches on ligaments in adolescent pitchers using biomechanical computer simulation
- Beta-tested new engineering software and wrote training documentation

Publications

Journal Articles

- B. Dunlap, T. J. Ruggles, D. T. Fullwood, B. E. Jackson and M. A. Crimp, "Comparison of Dislocation Characterization by Electron Channeling Contrast Imaging and Cross-Correlation Electron Backscattered Diffraction," Ultramicroscopy, no. 184, pp. 125-133, 2018.
- L. Hansen, B. E. Jackson, D. Fullwood, S. Wright, M. De Graef, E. Homer and R. Wagoner, "Influence of Noise Generating Factors on Cross Correlation EBSD Measurement of GNDs," Microscopy and Microanalysis, vol. 23, no. 3, pp. 460-471, 2017.
- B. E. Jackson, J. J. Christensen, S. Singh, M. De Graef and D. T. Fullwood, "Performance of Dynamically Simulated Reference Patterns for Cross-Correlation Electron Backscatter Diffraction," Microscopy and Microanalysis, vol. 22, no. 4, pp. 189-802, 2016.
- B. E. Jackson, D. Fullwood, J. Christensen and S. I. Wright, "Resolving Pseudosymetry in γ-TiAl Cross-Correlation Electron Backscatter," Applied Crystallography. Accepted for Publication.
- B. E. Jackson, D. Fullwood and G. Randall, "Comparison of Methods for Calculation Geometrically Necessary Dislocation Density using EBSD". In Process.

Conference Proceedings

- David Fullwood, Brian Jackson, Derrik Adams, Zach Clayburn, Mike Miles, Eric Homer, “Phase and Pseudosymmetry Identification in Metals Using Cross Correlation EBSD,” EMAG 2017, Manchester
- Kathryn A. Small, Jacob Hochhalter, Alex Zwiren, George Bernhard, Christopher Schade, Ryan Carpenter, Stephen Luckowski, Matthew Clemente, Elias Jelis, Brian Jackson, David Fullwood, Mitra L. Taheri, “Residual Strain Characterization of Additively Manufactured Ni Superalloy using HR-EBSD Analysis,” TMS 2018, Phoenix
- Bret E. Dunlap, David T. Fullwood, Brian Jackson, Timothy J. Ruggles, Martin A. Crimp, “Comparison of Dislocation Characterization in Tantalum using Electron Channeling Contrast Imaging and Cross-Correlation Electron Backscattered Diffraction,” TMS 2017, San Diego

- Landon Hansen, David Fullwood, Brian Jackson, Stuart Wright, Marc De Graef, Eric Homer, Robert Wagoner, “Influence of Noise Generating Factors on Cross Correlation EBSD Measurement of GNDs,” MS&T 2016, Salt Lake City
- B. Dunlap, P. Eisenloahr, D. Fullwood, B. Jackson, T. Ruggles, T. Bieler, M. Crimp, “Comparison of dislocation mapping using electron channeling contrast imaging and cross-correlation electron backscatter diffraction,” EBSD 2016, Tuscaloosa
- Landon Hansen, Brian Jackson, David Fullwood, Stuart I. Wright, Marc de Graef, Eric Homer, Robert Wagoner, “Influence of Noise Generating Factors on Cross Correlation EBSD Measurement of GNDs,” EBSD 2016, Arkansas
- Bret E. Dunlap, Philip Eisenlohr, Thomas R. Bieler, David T. Fullwood, Brian Jackson, Martin A. Crimp, “Characterization of Dislocation Motion Across Grain Boundaries in Commercially Pure Tantalum,” Dislocations 2016

Awards and Honors

- NSF Graduate Research Fellowship (2018)
- Stanford Graduate Fellowship (2017)
- Tau Beta Pi Engineering Honors Society Academic Scholarship (2015)
- Tau Beta Pi Engineering Honors Society Member
- Brigham Young University Academic Scholarship (2013-2017)

Service

American Red Cross **Jun 2016–Apr 2017**
Curriculum Intern Provo, UT

- Member of the leadership for Latino Outreach
- Managed the curriculum for classes in disaster preparedness, first aid, and CPR in Spanish
- Taught weekly classes to groups of volunteers in Spanish

Utah Underwater Robotics **Aug 2015–Apr 2016**
Volunteer Salem, UT

- Coached middle-school children apply the engineering design process to build an underwater ROV

The Church of Jesus Christ of Latter-day Saints **Mar 2011–Apr 2013**
Volunteer Representative Puebla, Mexico

- Mission Executive Secretary: Coordinated visas, bilingual mission communication, and travel
- Branch President: Provided leadership and training to a church congregation of 80 members