Curriculum Vitae/Resume

Jackson A. Killian

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EDUCATION

B.S. Physics, Computer & Information Science May, 2018
Ohio State University, Columbus, OH Arts and Sciences Honors College
Overall GPA (4.00 scale): 3.994

SKILLS

- **Programming Languages (proficient)**: Python, C#, Java, C, C++
- **Web-design Experience**: ASP.NET, Python/Django, PHP, JavaScript, HTML, CSS
- **Database-design Experience:** SQL, SQLite, Visual Basic, Microsoft Access
- **Research Programming Experience:** Python, R, Linux Environments, MATLAB, Android, iOS

RESEARCH EXPERIENCE

Undergraduate Thesis – Computer and Information Science [Link**]** (May 2017 – Apr 2018)
Ohio State University, Columbus, OH
Advisors: Dr. Kevin Passino and Dr. Arnab Nandi

- Design study to gather smartphone sensor data and Transdermal Alcohol Content (TAC) from 19 students
- Create mobile application and server to continuously collect and send sensor data over 12 hours
- Process noisy accelerometer and TAC signals and design filters to ease downstream analysis using MATLAB
- Extract features from signals and design intelligent systems to make classifications using MATLAB and Python

Undergraduate Research Fellowship – Biophysics (May 2016 – May 2017)
Ohio State University, Columbus, OH
Advisors: Dr. Ralf Bundschuh and Dr. Pearlly Yan

- Design computational workflow to make low-quality cancer samples useable in modern sequencing experiments
- Utilize Ohio Supercomputing Center and bioinformatics software to quantify degradation in sequencing data
- Adapt software based on discovered effects to improve sequencing data quality enabling downstream research

Undergraduate Research Assistant – Biophysics (Jan 2015 – Apr 2018)
Ohio State University, Columbus, OH
Advisors: Dr. Ralf Bundschuh and Dr. Pearlly Yan

- Collaborate with biologists to identify novel cancer-related characteristics in human genes and epigenetics
- Develop software with Python and R to design computational workflows for high-throughput sequencing data
- Design web applications for bioinformatics tools using Python, PHP, JavaScript, HTML and CSS
- Build workflows to run on nodes of the Ohio Supercomputer Center to analyze terabyte-order datasets

PROFESSIONAL EXPERIENCE

Data Science Intern (May 2018 – present)
Spatial.ai, Cincinnati, OH
Managers: Lyden Foust, Will Kiessling

- Collect, clean and segment geo-tagged social media posts from everywhere in the United States
- Design natural language processing pipelines using Python to assess "social scores" for cities using social media
- Create predictive models based on "social scores" and demographic data to estimate success of retail store fronts
- Generate detailed data analysis and correlation reports for executives in the retail real estate line of business

Application Developer Intern (May 2017 – Aug 2017)
PNC, Philadelphia, PA
Manager: James Snyder

- Work on software team to develop two ASP.NET web applications to support business operations
- Maintain Python/Django web application, retrofit with SSL certification to comply with security standards
- Implement comprehensive data integrity test cases during database technology transfer
- Design SQL Server Databases and Reports to support web applications

PROFESSIONAL EXPERIENCE (cont'd)

Independent Database Designer (Jun 2015 – present)
Delaware City Bus Company, Sewell, NJ
Clients: Greg and Isabel Fath

- Design MS Access database for private bus company with 150 bus routes, 80 buses, and 600 employees/students
- Implement functionality to generate schedules for drivers and aides and auto-create all company and state reports
- Construct custom back-end using SQL and VBA to provide a tailored, seamless UI/UX
- Provide technical support and implement regular updates to adapt to new user needs

PUBLICATIONS

Killian J, Topiwala T, Pelletier A, Frankhouser D, Yan P, Bundschuh R. "FuSpot: A Web-based Tool for Visual Evaluation of Fusion Candidates" BMC Genomics. 2018. 19:139. https://doi.org/10.1186/s12864-018-4486-3

He H, Li W, Yan P, Bundschuh R, **Killian J**, Labanowska J, Brock P, et al. "Identification of a recurrent LMO7-BRAF fusion in papillary thyroid carcinoma" Thyroid. 2018. doi: 10.1089/thy.2017.0258.

HONORS AND AWARDS

- **1st Place in Math, Computation, and Analytics**, Denman Research Forum, OSU (Apr 2018)
- **Arts and Sciences Undergraduate Research Scholarship**, Ohio State University (Nov 2017)
- **Physics Senior Alumni Award,** Top graduating senior, OSU Physics (May 2017)
- **Pelotonia Undergraduate Research Fellowship,** Columbus, OH (May 2016 – May 2017)
- **Member of Phi Beta Kappa,** National Honor Society (Apr 2016)
- **Member of Phi Kappa Phi,** National Honor Society (Oct 2015)
- **Member of Sigma Pi Sigma,** Physics Honor Society (Jan 2015)
- **Dean's List**, 9 semesters, Ohio State University Arts and Sciences Honors (Aug 2013 – Dec 2018)

LEADERSHIP AND TEACHING-RELATED EXPERIENCE

- **Creator, Organizer of ShowOHI/O,** a science-fair-style tech showcase (Apr 2017, Apr 2018)
  - 20 student projects, 60+ professional attendees, 100+ student attendees
  - Led team of 4 to secure venue, funding, projects, attendees, marketing
- **Organizer of DataFest** at Ohio State, a nation-wide data analytics competition (Apr 2017)
  - Organized sponsorship, marketing, team formation; mentored 150+ students
- **Web-team lead, Organizer of HackOHI/O**, Ohio State's hackathon program (Nov 2016, Oct 2017)
  - 750+ students, 200+ professional judges + mentors, 100+ industry partners
  - Organized sponsorship, marketing, team formation, branding; mentor at event
  - Led team of 6 developers to build web site, track site analytics
- **Project lead for data analysis contract** with Columbus Collaboratory (Apr 2016)
  - Led team of 4 to send survey nation-wide, perform text analysis on results
- **Webmaster, Executive of Big Data and Analytics Association** at Ohio State (Dec 2015 – Dec 2017)
  - Organized weekly events, gave data mining + data analysis workshops
  - Redesigned website with support for sponsors to search 200+ resumes

POSTER PRESENTATIONS

- **Denman Undergraduate Research Forum** (1st Place) (Apr 2018)
  - "Smartphone-Based Intelligent System: Using AI to Track Sobriety using Smartphone Motion Sensors"
- **Denman Undergraduate Research Forum** (Mar 2017)
  - "FuSpot: A Web-based Tool for Visual Evaluation of Fusion Candidates"
- **Rustbelt RNA Meeting** (Oct 2016)
  - "FuSpot: A Tool for Fusion Detector Post-analysis Coverage Visualization of Chimeric RNA-seq Data"

INVITED TALKS

- **Pelotonia Research Symposium**, Columbus, OH (Oct 2017)
  - "FuSpot: A Web-based Tool for Visual Evaluation of Fusion Candidates"
- **CIO Tomorrow**, Columbus, OH (Apr 2017)
  - "OHI/O: Ohio State's Hackathon Program"