James Adam Buckland

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EDUCATION

B.S. Mechanical Engineering GPA *3.38*

University of Illinois at Urbana-Champaign (UIUC), Illinois, U.S. *Fall '12 — Spring '16*

- *key courses:* Control Systems, Robotics, Fluid Dynamics, Dynamical Systems, Mechanical Design

KTH Royal Institute of Technology, Stockholm, Sweden *Winter '14 — Summer '15*

- *key courses*: Renewable Energy Technology, Computational Methods in Energy, Modeling of Energy Systems

WORK/RESEARCH EXPERIENCE

Stockholm Summer Arctic Program, Div. of Hist. Science, Tech., and Environment, KTH *Summer '15*

- Five-week engineering and environmental science fieldwork and research term in Norrbotten, Sweden
- Researched technological, environmental, social impact of industrialization surrounding iron ore mining industry

Cognitive Computation Group, Department of Computer Science at Illinois *Summer — Fall '14*

- Rewrote server backend, redesigned web frontend; improved demo performance and backend maintainability
- Refactored project and codebase documentation; wrote linguistics data visualization demos

Continuous Casting Consortium, Department of Mechanical Engineering at Illinois *Summer '13*

- Performed feasibility study on rewrite of software for the numerical simulation of continuous steel casting
- Created dependency charts / refactoring guides for FORTRAN to C software rewrite

Hayden Planetarium, American Museum of Natural History, NY *Fall '10 — Summer '12*

- Wrote computational fluid model with numerical methods, performed astrochemistry research
- Wrote and maintained software pipeline for 3D landscape assembly from JPL database

PROJECTS

Arduino Programming, Design for Manufacturability (at Illinois) *Fall 2015*

- Programmed Arduino controller for 'walking' alarm clock; designed circuits and mechanical walking linkages

Energy Utilization Optimization, Modelling of Energy Systems (at KTH) *May 2015*

- Created CAD model of campus building; simulated HVAC, airflow, energy usage to produce cost-benefit analysis

Wind Flow Modelling, Numerical Methods (at KTH) *Apr 2015*

- Simulated wind from historical climate + building geometry data w/ CFD; optimized wind turbine placement

EXTRACURRICULARS

Walk-in Tutoring Program Leader, Center for Academic Resources in Engineering *Summer '14 — Present*

- Ran walk-in tutoring and weekly study halls for undergraduate STEM courses; conducted resume reviews

Middle School Design Competition Committee, Engineering Open House *Fall 2015 — Present*

Scandinavian Club, Social Outreach Chair *Fall 2015 — Present*

Physics Society, Physics Van *Fall '13 — Spring '14*

- Performed educational physics-based demos in rural Illinois; led performance at Engineering Open House

The Ill Harmonic, Men's A Cappella *Fall '12 — Spring '14*

- Founder and lead arranger; led weekly rehearsals and vocal training workshops; scheduled performances

HONORS

R. M. Stephens Engineering Scholarship ('15), Benjamin A. Gilman International Scholarship ('14), William R. Miller & Martha L. Behr-Miller Scholarship ('14), Illinois for Illinois "I4I" Scholarship ('14), James Scholars Honors ('13)

TECHNICAL SKILLS

Languages: Python (numpy, scipy, matplotlib), C, C++, FORTRAN, Java

Software: DesignBuilder, STAR-CCM+, assorted CAD (Creo, Wildfire), aPriori, MATLAB/Mathematica, LaTeX

Web: HTML/CSS, Javascript (Backbone, Parse, Angular), PHP, MySQL