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# Onkur Sen

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## EDUCATION

**Stanford University**
September 2014 — June 2016 (expected)
M.S. Computer Science
Depth 1: Artificial Intelligence (AI)
Depth 2: Human-Computer Interaction (HCI)

**Rice University**
August 2010 — May 2013
B.S. Physics
B.A. Mathematics
Minor: Computational and Applied Mathematics

## SOFTWARE ENGINEERING EXPERIENCE

**Palantir** — May 2013 — September 2014
Forward Deployed Engineer (Philanthropy Team) — **Java, Groovy, SQL, Python**
- Developed custom dashboard visualizations of commitments by the Clinton Global Initiative (CGI) over the past ten years
- Maintained and upgraded infrastructure for the National Center for Missing and Exploited Children (NCMEC)
- Implemented secure password hashing and executed cloud migration for START/UMD Global Terrorism Database

**Plum District** — May 2012 — August 2012
KPCB Engineering Fellow — **Ruby/Rails**
- Corrected redemption of vouchers and allowed view of past offers in business center

**TripAdvisor** — December 2011 — January 2012
Software Engineer Intern — **Java/Velocity**
- Removed cross-site scripting (XSS) vulnerabilities and improved display of Facebook likes, ratings, and recommendations

## RESEARCH

**Course Planner** — Fall 2014 — Present
Advisors: Dr. Michael Bernstein and Dr. Ramesh Johari, Stanford University — **Python, Ruby/Rails, SQL**
- Training machine learning algorithms over 10 years of Stanford registrar course data to provide recommendations for students

**Apparition: Crowdsourced User Interfaces That Come To Life As You Sketch Them** — Winter 2014 — Fall 2014
Advisor: Dr. Michael Bernstein, Stanford University — **JavaScript (Meteor)**
- Developing web application that utilizes crowdsourcing around a Method Draw canvas to quickly prototype interfaces

**Searching for Supersymmetric Top Quarks at the Large Hadron Collider (LHC)** — Fall 2012 — Spring 2013
Advisor: Dr. Paul Padley, Rice University — **Python**
- Used boosted decision trees to isolate decay of stop quarks from background top-top interactions
- **Publication:** Sen, O. and Padley, B.P. Searching for Supersymmetric Top Quarks at the LHC [Thesis]. April 22, 2013.

**Melody Analysis and Harmony Generation** — Fall 2011 — Fall 2012
Advisor: Dr. Kurt Stallmann, Rice University — **Python**
- Determined key of input score given only melodic line and generated complementary harmonic progression
- **Publication:** Sen, O. and Stallmann, K. Analysis of Melody Through Key Definition and Generation of Complementary Harmonies. Rice Undergraduate Research Symposium. Houston, TX, April 13, 2012.

**Computationally Generating Musical Variations** — Fall 2009 — Fall 2011
Advisor: Dr. Sandip Sen, University of Tulsa — **Java**
- Created systematic framework for representing musical scores and used genetic algorithms to create variations on themes
- **Publication:** Sen, O. Creating Musical Variations Using Genetic Algorithms. *American Junior Academy of Sciences* 2011.

**Social Networks and Norm Emergence** — Fall 2008 — Summer 2009
Advisor: Dr. Sandip Sen, University of Tulsa — **Java**
- Analyzed comparative speed of emergence of a norm in social networks with different topologies and behavioral patterns
- **Publication:** Sen, O. and Sen, S. Effects of Social Network Topology and Options on Norm Emergence. *Lecture Notes in Artificial Intelligence* Vol. 6069, p. 211−222, Springer-Verlag, 2010.

**Social Dilemmas and Aspiration Levels** — Fall 2007 — Summer 2009
Advisor: Dr. Sandip Sen, University of Tulsa — **Java**
- Developed algorithmic approach to solve the Tragedy of the Commons in a multi-agent system using aspiration levels
- **Publication:** Sen, O. and Sen, S. Solving the Tragedy of the Commons by Adapting Aspiration Levels. *Proceedings of COIN@IJCAI09* 2009.

## PROJECTS

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|---|---|---|
| **onkursen.com**: Personal website | **Node.js** | 2012-present |
| **All About Inverses**: A concise primer on linear algebra | **HTML** | 2014 |
| **Contagion**: Modeling disease spread across social networks (Palantir Hack Week) | **Python, D3** | 2013 |
| **CT**: Using machine learning and the Global Terrorism Database to predict terrorist attacks | **Python** | 2013 |
| **Sangleet**: wrote/choreographed/directed a 15-minute musical | | 2011 |