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Onkur Sen

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Education

Rice University, August 2010 — May 2013
Bachelors of Science in Mathematics and Physics
Minor in Computational and Applied Mathematics
GPA: 3.70/4.00

Academic Honors

Rice Trustee Distinguished Scholarship	August 2010
Rice Century Scholar	August 2010
Robert C. Byrd Scholar	May 2010
National Merit Scholar	March 2010

Software Engineering Internships

Palantir — **Java** | Expected: May 2013 — August 2013

- Forward-deployed engineer intern with Helix team

Plum District (KPCB Engineering Fellow) — **Ruby/Rails** | May 2012 — August 2012

- Implemented tracking mechanism for Remarketing, Omniture, and Google Analytics
- Fixed view of past offers in business center and corrected redemption of vouchers and deals

TripAdvisor — **Java/Velocity** | December 2011 — January 2012

- Removed cross-site scripting (XSS) vulnerabilities and implemented JavaScript escaping for text
- Improved relevance of display of Facebook likes, ratings, and recommendations

Research

Searching for Supersymmetric Top Quarks at the LHC — **Python** | Fall 2012 — Present

- Using boosted decision trees in ROOT TMVA to isolate decay of squarks from background top-top interactions
- Extending on phenomenological data and theory from Bhaskar Dutta et. al. (Texas A&M)

Melody Analysis and Harmony Generation — **Python** | Fall 2011 — Fall 2012

- Modeled common practice music theory with respect to key structures
- Determined key of input scores given only melodic line; also generated complementary harmonic progression

⟶ **Preprint:** 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 — **Java** | Fall 2009 — Fall 2011

- Created systematic framework for representing musical scores
- Used genetic algorithms to create variations on themes

⟶ **Publication:** Sen, O. Creating Musical Variations Using Genetic Algorithms. *American Junior Academy of Sciences.* Washington, DC, February 16−20, 2011.

Social Networks and Norm Emergence — **Java** | Fall 2008 — Summer 2009

- Built social networks with different topologies and behavioral patterns
- Analyzed comparative speed of emergence of a norm in the networks

⟶ **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 — **Java** | Fall 2007 — Summer 2009

- Developed algorithmic approach to solve the Tragedy of the Commons in a multi-agent system using aspiration levels
- Formulated mathematical model placing an upper bound on convergence time

⟶ **Publication:** Sen, O. and Sen, S. Solving the Tragedy of the Commons by Adapting Aspiration Levels. *Proceedings of COIN@IJCAI09.* San Diego, CA, July 11, 2009.

Projects

Rice University Catalyst: website	**HTML/CSS**	catalyst.rice.edu
Rice University South Asian Society: website	**HTML/CSS**	sas.rice.edu
Simple Charts: real-time updating charts	**D3.js/NVD3.js**	simplecharts.herokuapp.com
vote.me: voting app for distributed elections	**Ruby/Rails**	voteme.herokuapp.com
Sangleet: wrote, choreographed, and directed a 15-minute musical		bit.ly/sangleet

Activities

Rice University South Asian Society: co-president (2012—present), treasurer (2011—2012)
Rice University Catalyst: co-editor-in-chief (2012—present), executive editor (2011—2012)
Will Rice College: academic fellow (2012—present)
Partnership for Advancement & Immersion of Refugees: volunteer/photographer (2010—2011)