

# Apurva Samudra

apurva@cmu.edu  
(412) 956 7194  
www.andrew.cmu.edu/user/asamudra

---

## Education

**Carnegie Mellon University** Pittsburgh, PA  
*Ph.D. Candidate, Chemical Engineering* 2008 – 2012

- Advisor: Prof. Nikolaos V. Sahinidis
- Thesis: Design of Drilling Fluid Systems for High-Pressure/High-Temperature Drilling
- GPA 4.00/4.00

**Indian Institute of Technology (IIT), Roorkee** Roorkee, India  
*Bachelor of Technology in Chemical Engineering* 2003 – 2007

- GPA: 8.62 / 10.0

## Research Interests and Expertise

### Optimization

Algorithms for mixed-integer, combinatorial, and non-linear optimization; Network optimization algorithms; Planning and scheduling; Power distribution network optimization; Smart grids

### Computer-aided Molecular Design

Molecular modeling; Property prediction methods; Polymer design; Environmentally conscious product design; Modeling of complex fluids

## Professional Experience

**Distribution System Optimization Intern** Summer 2010  
*ABB Corporate Research, Raleigh NC*  
Developed integrated model of power distribution networks and investigated the performance of global solvers for on-line implementation of the model

## Technical Skills

Programming Languages: Python, Unix shell script, C++  
Computational Software: MATLAB, Mathematica, Coopr, R  
Mathematical Programming Languages: GAMS and AMPL

## Relevant Courses

### Theory

Optimization, Logic and Constraints, Computational Aspects of Simplex Algorithm, Advanced Linear Programming, Linear Programming, Advanced Integer Programming, Advanced Process Systems Engineering, Special Topics: Process System's Engineering

### Applications

Planning and Scheduling, Optimization of Chemical Processes, Process Modeling and Simulation, Advance Process Control, Metabolic Engineering, Rheology of Complex Fluids

## Awards & Honors

**Honorable mention** at the 33<sup>rd</sup> ChEGSA Symposium, Carnegie Mellon University 2011  
Student Travel Award, Foundations of Computer-Aided Process Operations 2009  
**Graduate Fellowship** for doctoral studies at Carnegie Mellon University 2008 – 12  
Recipient of **Bharat Petroleum Higher Studies** scholarship 2007  
Recipient of **National Talent Search** scholarship 2001

## References

Available upon request