

# Park SangWoo

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## EDUCATION

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- Johns Hopkins University**, Baltimore MD graduated May 2016  
- **B.S. in Environmental Engineering** (*GPA*: 3.95 / 4.00, *GRE* – Quant: 170/170, Verbal: 161/170)  
**University of California, Berkeley**, Berkeley CA  
- **PhD Candidate** in Industrial Engineering and Operations Research (**IEOR**) September 2016 – present

## RESEARCH EXPERIENCE

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### Benjamin Hobbs Lab

- (a) **Optimal Transmission Planning under Uncertainty** February 2015 – present  
- Developed 3 versions of the JHSMINE (Johns Hopkins Stochastic Multi-stage Integrated Network Expansion) model and applied them to the WECC system: (1) 21-zone model without KVL constraints, (2) 300-bus model with KVL constraints, (3) 21-zone model with unit commitment and hourly loads  
- Performed sensitivity analyses concerning different network representations, scenario selections, power flow models, and operation models to see how those influenced the optimal transmission investments
- (b) **Scenario Reduction Methods for Stochastic Optimization**  
- Independent research on using the stratified scenario sampling method to reduce the computational time of the JHSMINE model while still capturing the benefits of stochastic optimization.

### Markus Hilpert Lab

- (a) **The Modified Green-Ampt Model** May 2012 – July 2012  
- Performed experiments on the effects of *Dynamic Capillary Pressure during Water Infiltration*, and studied how the results suggest modifications to the well-known Green-Ampt model.

## PUBLICATIONS AND AWARDS

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- Hobbs, B.F., Ho, J.L., Donohoo-Vallett, P.E., Xu, Q., Kasina, S., **Park, S.**, Ouyang, Y. (2016, Jan.), “What is the Benefit of Including Uncertainty in Transmission Planning? A WECC Case Study”, HICSS 2016 (accepted)
- Ho, J.L., Hobbs, B.F., Donohoo-Vallett, P.E., Xu, Q., Kasina, S., **Park, S.**, Ouyang, Y. (2015, Nov.), “Planning Transmission for Uncertainty: Applications and Lessons with the Western Interconnection” – Technical Report prepared for WECC and Lawrence Berkeley National Laboratory (submitted)
- **Park, S.**, Donohoo-Vallett, P.E., “Scenario Reduction Methods in a Stochastic Optimization Model for Transmission Planning that Integrates Renewables” (writing for submission in IEEE)
- **Provost’s Undergraduate Research Awards (PURA)** – JHU November 2015  
- Received fellowship of \$2500 to fund research on *scenario reduction methods for a stochastic optimization model that integrates renewables to the power transmission system*

## PROFESSIONAL ORGANIZATION & WORK EXPERIENCE

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- Tau Beta Pi**, Maryland Alpha December 2015 – present  
- National Engineering Honor Society
- Engineers without Borders (EWB)** – JHU October 2011 – May 2015  
- Carried out a “sustainable irrigation ram pump project” in rural South Africa; designed pump O&M manuals, developed educational training sessions, installed ram pumps in rural Africa
- Korean-American Scientists and Engineers Association (KSEA)** March 2015 – present  
- Professional networking, organized mentorship events and speaker events for underclassmen
- Military Service in ROK (Republic of Korea) Army** September 2012 – August 2014

## TECHNICAL SKILLS

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Python, MATLAB, AIMMS, GIS, CAD