

Dr. Deepu Philip

Assistant Professor, IIT Kanpur

Dr. Deepu Philip is an Assistant Professor in the Industrial & Management Engineering Department of Indian Institute of Technology Kanpur (IIT Kanpur). Prior joining IIT Kanpur, he worked as systems engineer & consultant in United States of America. His areas of interest include information and decision support systems, systems simulation, planning, robust scheduling, routing, process improvement analysis, optimization algorithms, transportation systems, data mining & analysis, effectiveness & efficiency studies, and outsourcing analysis. He is also interested in emerging technologies of the finance sector.

Educational Background

Dr. Philip holds multiple degrees from different educational institutions across the world.

- Doctorate in Industrial Engineering from Montana State University (MSU) Bozeman, USA. GPA 3.80, Spring 2008.
- Masters of Science degree in Industrial & Management Engineering from MSU Bozeman, USA. GPA 3.75, Spring 2005. (Minor in Financial Management Engineering).
- Bachelor of Technology in Industrial Engineering from Kerala University, Kerala, India. GPA 3.76, Spring 2000.

Professional Experience

Dr. Philip's major professional experiences include:

- Assistant Professor, Industrial & Management Engineering, IIT Kanpur, Kanpur, India. (Sept 2009 – Present).
- *Systems Engineer & Consultant*, Current Transportation Solutions, Bozeman, Montana (MT), USA. (May 2008 – August 2009). Worked on various US government projects.
- *Information Management System Administrator* for the Associated Students of Montana State University (ASMSU), Bozeman, MT, USA. (Jan 2005 – May 2008). Designed, developed and managed a complete web based financial system with data mining capabilities.
- *Adjunct Professor*, Mechanical & Industrial Engineering Department (MIE), MSU Bozeman, MT, USA. (Aug 2004 – Dec 2007). Designed and taught applied engineering data analysis courses (300 level) for all engineering majors in the College of Engineering, MSU Bozeman.
- *Student Consultant*, Montana Higher Education System (MHES), Helena, MT, USA. (Sept 2005 – March 2006). Analyzed higher education cost & quality for the state of Montana, developed performance matrices using Activity Based Cost (ABC) accounting.
- *Graduate Research Associate*, Western Transportation Institute (WTI), Bozeman, MT, USA. (May 2003 – Aug 2004). Developed concept of operations for transportation resource management, new transit systems development, trip planning systems and ridership data analysis systems.
- *Graduate Teaching Assistant*, MIE Department, MSU Bozeman, MT, USA. (Sept 2001 – Dec 2003). Assisted professors in teaching and conducting both graduate and undergraduate level courses.
- *Chief Programmer*, Betney's Solutions, Trivandrum, Kerala India. (Dec 1998 – Aug 2001). Developed automation software for hospitals and multimedia solutions for various vendors.
- *Student Intern*, Bharat Heavy Electricals Limited (BHEL), Hyderabad, India. (June 1998 – Sept 1998). Worked under the industrial engineering department of the steam & gas turbine plant.

Summary of Skills

Dr. Philip's key skills include systems simulation, production, planning and control, parallel cluster supercomputing, complex Relational Database Management System (RDBMS), Decision Support Systems(DSS), project management, Object Oriented Analysis & Development (OOA&D), and Rapid Application Development (RAD). Details of his skills are categorized below in the order of skills (Proficiency – High, Medium, Low).

- *Programming Skills:* C/C++ (H), LISP (H), Prolog (H), PHP (H), HTML (H), Pascal (H), Basic/QBasic (H), LAM-MPI (H), OPL Studio (H), JavaScript (M), OpenGL (M), Perl (M), Fortran77 (L), COBOL (L).
- *Databases:* MySQL (H), PostgreSQL (H), Microsoft Access (H), ArcView GIS 3.0 (H), ArcGIS 9.0 (M), SQL Server (M), Sybase (M), Oracle (M), DB2 (L).
- *Operating Systems:* Linux (H), Unix(H), DOS (H), Windows – 95, 98, 2000, XP (H).
- *Statistical Software:* SAS (H), JMP (H), Minitab (H), Microsoft Excel (H), SPSS (M), DesignExpert (M).
- *Simulation Systems:* SIMAN (H), Arena 10.0 (H), SIMPL (H), SimScript (M), Siemens PLM software (H).
- *Other Software:* Photoshop (H), Visio (H), Microsoft Office (H), LaTeX (H), 3D Home (M), Prosper (M), 3D Studio Max (M), UML (M), Macromedia Dreamweaver (L).
- *Project Management:* OpenProj (H), GanttProject (H), Bugzilla (M), Microsoft Project (H), Primavera (M).

- *Communication Languages:* English (H), Malayalam (H), Hindi (H), Tamil (L).
- *Engineering skills:* Writing (H), presentation (H), problem solving (H), ERP/MRP systems (H), statistical quality control (H), experimental design (H), Artificial Intelligence (AI) & fuzzy logic (H), planning (H), scheduling (H), process control & improvement (H), ergonomics (M).
- *Financial Management Skills:* Activity Based Costing (H), Financial DSS (H), Economic feasibility and risk assessment (H), Outsourcing analysis (M).

Major Accomplishments

Dr. Philip is an accomplished leader, recognized scholar and well known for his work with various non-profit organizations. His major accomplishments and awards include:

- Board member of Streamline Transit System, Bozeman, MT, USA (Aug 2005 – now).
- Elected student senator of Associated Students of Montana State University (ASMSU) for three consecutive years (April 2005 – April 2008), winning the best senator of the year award each year.
- Ranked second in the professor rating by students in IME department, MSU Bozeman, MT, USA.
- Member of Alpha Pi Mu (APM), Industrial Engineering honor society.
- Member of Institute of Industrial Engineers (IIE).
- Member of Institute for Operations Research and the Management Sciences (INFORMS).
- Rank holder in Bachelor of Technology in Industrial Engineering from Kerala University, India.

Papers and Publications

Dr. Philip has published and presented his research in different journals and conferences. Some major ones include:

- David Kack and Deepu Philip, "An Evaluation of the RouteMatch Software in the Billings, MT MET Special Transit System", *Journal of the Transportation Research Forum*, Vol. 47, No. 3, Special issue 2008.
- Deepu Philip, "Robust Schedules and Disruption Management for Jobshops", *Doctoral Dissertation*, April 2008.
- Deepu Philip, "Scheduling reentrant flexible job shop with multiple products and sequence dependent setup time effects", *Master's Thesis*, Fall 2005.
- Deepu Philip and Ed Mooney, "Disruption management using robust schedules for jobshops", presented at the INFORMS conference in Seattle, Nov 2007.
- Ed Mooney and Deepu Philip, "Scheduling reentrant flexible job shops with sequence setup times", presented at the INFORMS conference in Pittsburgh, Nov 2006.
- Laura Stanley and Deepu Philip, "Development of a web based household travel survey", presented at the 2005 district 6 annual ITE conference in Kalispell, July 2005, published in proceedings.
- Ed Mooney and Deepu Philip, "Complex shop scheduling using simulation based local improvement algorithm", work in progress paper for *Journal of Scheduling special edition on applied OR*, 2009.
- Deepu Philip and Ed Mooney, "Slack policies for jobshop machine disruptions", working paper for *European Journal of Operations Research*, 2008.
- Deepu Philip and Rafal Angryk, "Interpreting imprecise data using decision tree in a fuzzy relational database", work in progress paper for *IEEE conference*, 2009.
- Peeyush Mehta, Prabha Sharma, Deepu Philip, and Pushkar Pandit, "An Efficient Local Search for Minimizing Completion Time Variance in Permutation Flow Shops", working paper for *Computers in OR*, 2010.
- Peeyush Mehta, Deepu Philip, and Ajay Jha, "Integration of production planning and logistics decisions to manage product variety in commit-to-delivery systems", working paper for *EJOR*, 2010.

Contact Information

Dr. Philip can be reached by e-mail: dphilip@iitk.ac.in or by telephone: **0091-512-259-7460**.