

# VIVEK KUMAR

*System Software Engineer*  
MPI Library Development,  
HPC Development Group,  
IBM Systems & Technology Labs,  
Bangalore, INDIA.

Email: vk.aries@gmail.com

---

## EDUCATION

*Birla Institute of Technology and Science, Pilani, India.*  
**M.S. in Software Systems (Distance Learning).** **2005-2008**  
Dissertation: Radical Operating System  
C.G.P.A.: 6.13

*Centre for Development of Advanced Computing (C-DAC), Chennai, India.*  
**Diploma In Advanced Computing.** **2003-2004**  
Grade: A.  
Percentage: 78.3%.

*Siddaganga Institute of Technology. Tumkur, India.*  
**Bachelor of Engineering, Mechanical.** **1998-2002**  
Grade: First Class With Distinction.  
Percentage: 74.6%.

## COMPUTATIONAL SKILLS

- Operating Systems: Linux, AIX, MS Windows.
- Computer Languages: C, C++, FORTRAN 90.
- Compiler Construction Tools: Lex, Yacc.
- HPC Software: MPI (IBM MPI, MPICH2), OpenMP.
- Applications Software: OpenOffice, MS Office, Lotus Notes, LaTeX.
- Internet Development: HTML.

## INDUSTRIAL EXPERIENCE

**C-DAC R&D, Bangalore, India.** **Feb 2004-Feb 2006**

- Role: Software Developer
- Responsibilities: Design, Development and Maintenance.
- Work Domain: C-DAC Fortran 90 Compiler.
- Projects Handled:
  - Maintenance of compiler parser, YACC File.
  - Maintenance of compiler driver.
  - Executable and Linkable File Format: Stuffing and extracting symbols in object file for C-DAC compiler.

**3DPLM Software Solutions Ltd, Pune, India.****Feb 2006-Aug 2006**

- Role: Software Engineer
- Responsibilities: Design, Development and Maintenance.
- Work Domain: Dassault System's CAD Software maintenance.
- Project Handled:
  - Maintenance of CAD Software.

**IBM Systems & Technology Labs, Bangalore, India.****Aug 2006-Current**

- Role: System Software Engineer
- Responsibilities: Design, Development & Testing.
- Work Domain: IBM MPI Library development, BlueGene supercomputer testing.
- Projects Handled:
  - BlueGene supercomputer software stack (control system) testing.
  - Enhancing Non-Blocking Collective Communication library in IBM MPI.
  - Implementing FORTRAN 90 module support in IBM MPI to enforce strict compile time type checking.
  - Implementing dynamic tasking in IBM MPI – MPI\_comm\_spawn, MPI\_Comm\_spawn\_multiple, MPI\_Comm\_get\_parent, MPI\_Comm\_connect, MPI\_Comm\_accept, MPI\_Comm\_join.

**PUBLICATIONS**

- Vivek Kumar and Subhabrata Bhattacharya: *Method for reducing memory footprint of MPI FORTRAN 90 module to enforce strict type checking.* [www.ip.com](http://www.ip.com), (Publication number: IPCOM000175260D, 2008).
- Vivek Kumar: *Understanding Executable & Linkable File Format by programming.* (Submitted to IBM Developer Works, 2008)
- Vivek Kumar and Subhabrata Bhattacharya: *A beginners guide to Poughkeepsie development environment.* (IBM internal publication, 2007).

**PRESENTATION & LECTURES**

- Gave a lecture on “*Introduction to High Performance Computing*” followed by a hands on session on MPI and OpenMP in Saha Institute of Nuclear Physics, Kolkata, India. (2008).
- Gave a lecture and hands on session on “*Introduction to Message Passing Interface*”, in National Metallurgical Laboratories, Jamshedpur, India. (2005).
- Taught courses in *Operating System* and *C-Programming* to undergraduate students. (2002)

**AWARDS**

- Second prize in intercollege hobby project presentation, titled *Software for performance testing of internal combustion engine*”, Siddaganga Institute of Technology, India (2001).

- First prize in intercollege hobby project presentation, titled "*Software for design of bearings*", Siddaganga Institute of Technology, India (2002).

## **LANGUAGES**

- English: Native Language.
- Hindi: Mother Tongue.

## **PERSONAL**

- Sex: Male.
- Date of Birth: March 23<sup>rd</sup> 1980.
- Martial Status: Married.
- Nationality: Indian.