Vishwa Mukhtyar,

Fourth year Undergraduate,

Dept. Of Chemical Engineering

RESEARCH INTERESTS:

Process Systems Engineering, Modelling, Simulations, Applied Math, Environmental causes.

CPI:

**8.38**

RELEVANT COURSES:

|  |  |  |
| --- | --- | --- |
| Advanced Process Control | Mathematical and Statistical Methods in Chemical Engg. | Applied Multivariate Statistics |
| State Estimation | Optimization |

ACADEMIC PROJECTS:

* **Modelling, Simulation and Control of a Solar Thermal Power Plant: Heat Exchangers and Turbine Modules.**

***(Supervised Learning)***

*Guide: Prof. Mani Bhushan, IIT Bombay* Summer 2011-Ongoing

Completed

* The work is in support of ongoing activity towards a live project: “Development of a 1 MW solar thermal power testing, simulation and research facility.”
* It involved developing steady state and dynamic models for the heat exchangers (superheater, boiler and preheater) and turbine units for the plant. The models were simulated in Scilab, an integrated version of the plant was developed.

Ongoing:

* Various control strategies will now be studied and benchmarked with respect to set-point tracking and disturbance rejection capabilities.
* **Stability Analysis of the Lotka Volterra Predator Prey model.**

*Instructor: Prof. Sharad Bharatiya, IIT Bombay* Course Project, Autumn 2011

* The project involved determining the critical points of the model, analysing their stability character starting with different initial conditions, in order to cover all possible cases.
* **Molecular Simulations**:

*Instructor*: *Prof. Jhumpa Adhikari, IIT Bombay* Course Project, Spring 2010

* Designed a Metropolis Monte-Carlo program to simulate the 3-D Leonard-Jones model for an isothermal isobaric ensemble.
* **Project Biosynth:**

*Guide: Prof. Sanjay Mahajani,* *IIT Bombay* : Summer 2009

* Group project to set up a biodiesel plant on the campus, aimed at reducing fossil fuel dependence in the long run by running campus vehicles on biodiesel manufactured from oil from various sources.

INTERNSHIP:

**Internship with Excel Crop Care Ltd.,** Summer ‘10**:**

* Detailed study of the **Unit operations** involved in the Endosulfan Plant at Bhavnagar, Gujarat.
* Involved the study of **distillation columns, heat exchangers, cooling towers** and **reactors** in the endosulfan plant and performing relevant calculations.
* Involved overview of **safety** mechanisms, **storage** of dangerous chemicals, **waste disposal** techniques (incineration, effluent treatment).
* Also **involved lab scale formulations and separation techniques**.

PROGRAMMING SKILLS:

* **Programming Languages** : C/C++
* **Operating Systems:** Windows, Linux
* **Prominent Software:** MATLAB, SCILAB, ASPEN, FLUENT (basic)

Additional Course: Completed the **Continued Education Programme** on **Advanced C++** **Programming** during summer 2009 with a grade of **Very Good**.

EXTRA-CURRICULAR:

Positions of Responsibility:

* **Institute Student Mentor Program (2011-12):** Selected among 80 out of about 400 applicants to mentor freshmen during their formative days in the institute.
* **Department Student Mentor Program (Spring 2012):** Mentoring academically weak students in the department to efficiently manage their studies and cover up backlogs.
* Currently **Class Representative** of the 4th year batch, to ensure smooth communication between students and professors.
* **Convener** of **Saaz,** the Indian Music club of IIT Bombay, for 2010-11. Involved in organising performances and workshops for music enthusiasts across the institute.

Events/Competitions:

* Winner of ‘Management Maestro’, at Exergy 2012, ICT Mumbai.
* Regularly contribute as **guitarist** for Surbahaar, the biggest musical event in IIT Bombay, Swarsandhya (Musical evening) and Goonj, the inter-hostel band General Championship.
* Was semi-finalist in the inter-hostel G.C. and at Mood Indigo ’10 in **JAM.**
* Attained distinction in all the 5 stages of the **SANSKRIT** Public Examination conducted by the Bharatiya Vidya Bhavan to test Sanskrit language proficiency.
* Won several district level **elocution and recitation** competitions in English and Hindi and was awarded the Best Speaker and Best Actor for the years 2003-2004 and 2004-2005 respectively in the school.

Awards and Scholarships:

* Was awarded the **Hostel Special Mention** for contribution to cultural activities.
* Was awarded the **K.C.** **Mahindra Search for Talent Scholarship** for **excellence in Academic and non-Academic fields** for **three consecutive academic years** 2001-02, 2002-03, and 2003-04, and the **Mahindra Honour Scholarship** for **winning the same more than once** in the years 2002-03 and 2003-04.
* Was awarded the **Sri Omkarnath Arya Smruti Protsahan Puraskar** by the **Arya Pratinidhi Sabha**, Mumbai and the **ARYA KUMAR AWARD** by the **Arya Vidya Mandir Society** for the **Best All Round performance** in school (2005-2006).