

## Rayan Felix Coutinho

### Objective

To further manufacturing knowledge through research and application in a technically challenging position at a growth oriented company.

Future plans include studying Business and Commercial law (J.D.) part time in Fall 2002.

### Education

Ph.D., Mechanical, Industrial and Manufacturing Engineering,  
The University of Toledo, OH, Expected Graduation Date: August 2002.  
Current GPA: 3.879

M.S., Industrial Engineering,  
The University of Toledo, Toledo, OH, Graduation Date: December 2001.  
GPA: 3.867

Bachelor of Engineering (B.E.) , Production Engineering,  
Fr. Conceicao Rodrigues College of Engineering, University of Bombay, Bombay, India.  
Graduation Date: September 1999.  
Graduated First Class with Honors.

### Work Experience

Senior Researcher, Precision Micro-Machining Center (PMMC), The University of Toledo, OH January 2000- Present

Project for Dana Corporation, Pottstown, PA, "Hard Turning of Journal Cross. April 2000-Present

Associate Advisor to graduate students for MS Degree projects, Precision Micro-Machining Center (PMMC), The University of Toledo, Ohio  
August 2000-Present

- Hard turning of camshafts
- Hard boring of bearing cups
- Design and fabrication of a dynamometer for turning

Graduate Project Advisor, MIME Dept, The University of Toledo, Ohio,  
September 1999- December 1999.

Quick Change Fasteners and Methods for Extrusion Line - Cooper Engineered Products, Bowling Green, Ohio.

Co-op trainee, Research and Development (Materials) Department, Crompton Greaves Ltd., Bombay, India. October 1998-April 1999.

- Designed and fabricated a set-up to simulate the injection molding cycle.
- Designed and fabricated a work holding fixture for magnetization of small motor magnets.

### Volunteer Work

Volunteer Income Tax Assistance (VITA), The University of Toledo, OH 2001

Volunteer Tutor, Learning Enhancement Center, The University of Toledo, OH August 2001-Present

Fund Raising, Let Individuals Feel for Everyone (LIFE), Bombay India. Organization working for leprosy patients in India.

Editor, Micron: A bi-annual newsletter of the Precision Micro-Machining Center

Designer, Brochure for Precision Micro-Machining Center

## Scholarships And Awards

Research Assistantship, MIME Dept., The University of Toledo. January 2000 –Present

Merit scholarship, Fr. Conceicao Rodrigues College of Engineering, Bombay, India, 1995-96, 1996-97 Academic years. This scholarship is awarded to the top 5 students in each department every year.

Best Student of the Institution 1993, St. Blaise High School, Bombay, India.

## Computer Skills

Operating Systems: Unix, Windows, DOS  
Application Packages: MS Office XP, Winston LINDO, Minitab, Matlab, SPSS.  
CAD tools: AutoCAD 2000, Unigraphics 3.0, SmartCAM, IDEAS  
Programming: C ++ , Matlab, NC Programming

## Professional Memberships

Society of Manufacturing Engineers (SME), Student Member.

## Current Research

Hard turning of automotive components  
Model for prediction of surface roughness in hard turning using Neuro-Fuzzy techniques  
'A surface prediction model is proposed wherein a 3-D surface visualization will be achieved through interpolation of tool profile, tool geometry, machine system characteristics and stochastic components based on micro-hardness variations in the material. This will provide an alternative to typical parameters used in industry such as Average surface roughness Ra, which are generally inadequate to define functionality of surfaces.'

## Graduate Coursework

Manufacturing Engineering	Tribology of Manufacturing Processes
Adv. Material Removal Processes	Computer-Aided Manufacturing
Tool Engineering	Manufacturing Systems
Operations Research	Adv. Engineering Mathematics
Non-Traditional Machining Processes	CAD/Finite Element Methods
Quantitative Methods	C/C++ Programming
Adv. Machining of Brittle Materials	

## Graduate Projects / Research Papers

Research paper on "Tribological Aspects of the Hard Turning Process."  
Research paper on "Super-finishing Stones".  
Research paper on "Super-polishing of Sapphire."  
Research paper on "Tool Engineering for EDM"  
Developed a CNC program and machined two mating parts of the Volkswagen symbol for Computer-Aided Manufacturing course.  
Designed the process technology for pressure relief valve in the Manufacturing Engineering course

## Extra-Curricular

Captain, Soccer team, Fr. Conceicao Rodrigues College of Engineering, University of Bombay, Bombay, India. 1995-1998  
Captain, Soccer team, St. Blaise High School, Bombay India, 1991-1993  
Head Boy (School Captain), Primary Section 1987 Secondary Section 1993. Elected by secret ballot by students  
Passed Government of India Drawing and Painting Examinations (Elementary and Intermediate)  
Hobbies include poetry, painting, and guitar.

## References

Dr. Nagi Naganathan, Dean of Engineering, The University of Toledo.  
Dr. Ioan D. Marinescu, Executive Director, Precision Micro-Machining Center, The University of Toledo.  
Mr. Keith Sinram, Manufacturing Program Manager, Spicer Driveshaft Division, Dana Corporation