PAUL D. FRANZON

Cirrus Logic Distinguished Professor
Director of Graduate Programs
Department of Electrical and Computer Engineering

I.   INTRODUCTION

B. BRIEF RESUME

1. Education

- Doctor of Philosophy, Electrical and Electronic Engineering 1989, University of Adelaide, Australia . Advisor: Kamran Eshraghian.
- Bachelor of Engineering with First Class Honours, Electrical and Electronic Engineering: 1984, University of Adelaide, Australia
- Bachelor of Science, Physics and Mathematics: 1983, University of Adelaide, Australia.

2. Professional Experience

- Assistant Professor, Associate Professor, Professor, and Distinguished Professor North Carolina State University, Department of Electrical and Computer Engineering, Raleigh, North Carolina, January 1989 – present
- Technical Director, Rambus (part time/consulting), 2009-11, Chapel Hill, NC.
- Cofounder, LightSpin Technologies Inc., 2001-.   Vice-President of Engineering, 2001-2002, Raleigh NC.
- PhD Candidate, University of Adelaide, Department of Electrical and Electronic Engineering, Adelaide, South Australia, Australia, April 1987 - December 1988.
- Director and Co-Founder, Network Communications Pty. Ltd., Adelaide, South Australia, Australia, April 1987 - April 1989.
- Consultant, AT&T Bell Laboratories, Holmdel NJ, January 1986 - April 1987.
- PhD Candidate, University of Adelaide, Department of Electrical and Electronic Engineering, Adelaide, South Australia, Australia, August 1984-December 1985.
- Engineer, Defence Science and Technology Organization, Salisbury, South Australia, Australia, January 1984--July 1984
- Intern, Defense Science and Technology Organization, Salisbury, South Australia, Australia, December 1982--March 1983.
- Intern, Telecom Australia, Adelaide, South Australia, Australia, December 1981-March 1982.
- Infantry Soldier and Officer, (Ranks held: Private - Captain), Royal Australian Infantry Corps, Australian Army Reserve, December 1979 - December 1991.

3. Scholarly and Creative activities

Type	Number
Books	4
Solution Manuals	1
Edited Book Chapter	19
Refereed Journal article	99
Conference Paper (refereed)	237
Patents granted	10

4. Membership in professional organizations

Fellow, Institute of Electrical and Electronic Engineers
Member, IMAPS
Member, SPIE
Member, Association of Computing Machinery

5. Scholarly and professional honors

- Alumni Distinguished Graduate Professor Award, 2021
- NCSU Innovator of the Year Award, 2015
- College of Engineering Board of Governor's Award, 2014
- NRL Alan Berman Research Publication Award, 2008
- Babbage Award, Synopsys, 2008
- Fellow of the IEEE, 2006
- Alcoa Research Award, 2005
- ECE Graduate Teacher of the year award, 2007
- ECE Most Helpful Teacher of the year award, 2007
- ECE Teacher of the year award, 2006
- ECE Graduate Advisor of the year award, 2006
- Alumni Undergraduate Distinguished Professor, 2003-2005.
- Graduate teacher of the year, ECE department, 2005
- NSW Australia Expatriate Scientist Award, 2003
- Selected to the NCSU Academy of Outstanding Teachers, 2001
- First round prize winner, SRC copper challenge, 2000.
- Teacher of the Year Award, presented by the IEEE Student Branch, 1997
- National Science Foundation Young Investigator's Award, 1993.
- 13 prizes while a student at the University of Adelaide
- Australia Defense Medal, 2006

6. Professional service on campus

- Member, STRAG 2003-2005
- Instructor, PE preparation course 1995-2000

7. Professional service off campus

- Consultant to Perkins Cole, 2022, patent issues
- Consultant to Micross, 2022, 3DIC processes
- Consultant to DLA Piper, 2022, patent issues
- Consultant to Wolf Greenfield, 2022, patent issues
- Consultant to Lee Hayes, 2020-, patent issues
- Consultant to Fish and Richardson, 2020-22, patent issues
- Consultant to Sofwerx, 2018, Machine learning for UAVs.
- Consultant to Kirkland, 2019- patent issues
- Consultant to Finnigan, 2016-, patent issues
- Consultant to Wilmar, 2017-, patent issues
- Consultant to Unified Patents, 2017- , patent issues
- Consultant to DARPA, Thermal issues, 2012-2016
- Consultant to Paul Hastings, OMM, KL Gates, Samsung, Micron and SK Hynix, 2015-,2017 Patent issues
- Consultant to LDKM and AVT, Patent issues, 2013-2015
- Consultant to Skiermont Puckett and Spherix, Patent issues, 2014-2016
- Consultant to Haliburton, 2014
- Consultant to DARPA, Exascale Computing Study, 2007-9.
- Consultant to Rambus, Semiconductors, 2009-12
- Consultant to Techsearch, 2008.
- Consultant, NTU, 2004-9. ASIC Design.
- Consultant to Tessera, 2009. 3DIC advising.
- Consultant, Irvine Sensors, 2006. Secure chip design.
- Consultant, Cisco Systems, 2006, Signal Integrity.
- Consultant, Talon Logic, 2005. Secure system Design.
- Consultant to O'Malveny and Meyers, 2000-2002, Patent issues.
- Consultant to Venture 2000, 2000, Due   Diligance.
- Consultant to CAPPS, 1999-2000, IP Development.
- Consultant to Sofrent, 1999-2000, IP Development.
- Consultant to Ericsson, 1997, Synthesis Methodology.
- Consultant to Cadence, 1996. Evaluated possible company acquisition.
- Consultant to Polychip, 1994 - 2000. Circuit Design.
- Consultant to Square-D, 1996. Interconnect Design.
- Consultant to Mentor Graphics, 1995, 1996. Technical advisory board.
- Consultant to Cadence Design Systems, 1992, 1996. Technical advisory board.
- Consultant to DCT, 1995-1996. ASIC Design.
- Consultant to Techsearch International, 1989-1991. Report Preparation.
- Consultant to BNR, HP, Sun. 1992-4. Interconnect Design.
- Consultant to MCNC, 1989. CAD

C. CANDIDATES STATEMENT

As **Director of Graduate Programs in ECE** (starting in 2016), I have introduced the following innovations:

1. I led the faculty in agreeing to a reduced course load for our PhD students (from 42 CH to 30 and simplified rules). This has been very popular with PhD students. (2016)
2. I introduced a PhD Visit Day and held one every year. The ones held in 2017 and 2018 each involved over 40 visitors and about the same number of alumni, faculty and current students. Over 90% of students surveyed stated they are more likely to come as a result of the visit day.
3. I reorganized an office into 3 staff and 1 EPA position. The 3 staff consist of two GSSCs (one for admissions and one for current students), and one assistant for both. The EPA position is our new Director of Graduate Employment Services. Her role is to help students get jobs and internships.
4. I introduced a series of panels aimed at PhD students. Panels held so far include the following
    a. Becoming faculty (2017);
    b. Becoming an industry researcher (2018);
    c. Writing proposals (2019).
5. I held two classes on advanced study skills aimed at MS students (2018).
6. I took over leadership of the Graduate Admissions Committee. We reorganized the PhD recruiting flow, starting from information disseminated by the Admissions GSSC through to TA allocations. I reorganized the MS admissions flow, starting from data prep by the Admissions GSSC to using statistical models to assist (not make) the decision making process.
7. I changed the PhD application process to encourage students to answer questions specifical to what they can draw upon to make good PhD students.
8. I redid our marketing materials and started marketing at other campuses in the UNC system.
9. I conducted surveys of current students, and alumni to determine gaps in our program. As a result, I introduced additional courses in verification with UVM, operating systems and hardware security. In addition the Neural Networks course was refocused and a concentration on Machine Learning introduced.
10. Introduced Graduate Certificates in 5G, ASIC Design and Verification, CPE and EE.

As **Site Director for the Center for Advanced Electronics through Machine Learning** (CAEML) I lead this Center for NCSU. I am one of the founding directors for this Center, which is run jointly with UIUC and Ga Tech. I am responsible for member company recruiting, faculty recruiting and running the biannual meetings as held every 18 months on campus here. I have particularly focused on drawing in other NCSU faculty to the Center. Two new faculty have joined since the center started.

II. TEACHING AND MENTORING OF UNDERGRADUATE AND GRADUATE STUDENTS

A. TEACHING EFFECTIVENESS

1. Courses Taught

Since becoming DGP, I am not required to teach, though I did teach ECE 464/564 in 2016, 17 and 19.   I continue to remain involved in ECE 464/564 and ECE 733 though by giving guest and substitute lectures, advising on course policies, content and suggesting suitable class projects.

Course	When	Enrollment	Instructor effectiveness	Course excellence
ECE 464 ASIC Design	F 21	41	na	na
ECE 564 ASIC Design	F 21	157	na	na
ECE 564-601	F 21	7	5.0/4.3	4.7/4.1
ECE 564-640	F 21	11	4.8	4.3
ECE 564-651	Sum 21	9	4.3/3.8	4.2/3.8
ECE 464 ASIC Design	F 20	39		
ECE 564 ASIC Design	F 20	54		
ECE 564-601	F 20	10	4.2	4.6
ECE 564-651	Sum 20	16	4.3	4.0
ECE 464-001	F 19	39	4.7	4.5
ECE 564-001	F 19	139	4.7	4.5
ECE 564-601	F 19	6	5.0	5.0
ECE 464-001	F 17	36	4.4	4.4
ECE 564-001	F 17	148	4.4	4.4
ECE 564-601	F 17	7		
ECE 464-001	F 16	29	4.8	4.6
ECE 520-001	F 16	121	4.8	4.8
ECE 520-601	F 16	9	4.4	4.2
ECE 520-651	Su 16	16	4.6	4.6
ECE 464-001	S 15	19	4.3	4.3
ECE 520-001	S 15	119	4.3	4.3
ECE 520-601	S 15	11	4.8	5.0
ECE 520-603	S 15	3		
ECE 520-651	SuI 15	16	4.6	4.6
ECE 733-001	S 15	50	4.5	4.3
ECE 464-002	F 15	21	4.6	4.5
ECE 520-002	F 15	129	4.6	4.5
ECE 520-601	F 15	7	5.0	5.0
ECE 634-602 ASIC Design	F 2014	6		
ECE 634-602 ASIC Design	F 2014	2		
ECE 520-601	S1 2014	9		

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