IEEE SCV Signal Processing Society

Date: June 14th 2004
Title: Fortran 95, or Matlab meets C++
Speaker: Matthew Halfant, PhD, VP Advanced Technology, Genesis Microchip, Inc
Location: National Semiconductor Credit Union Building (Building 31), 955 Kifer Rd.,
Sunnyvale (Near the intersection of Lawrence and Central Expressway);
Coordinates: N37deg 22.464' W122deg 00.272' (WGS84);
http://maps.yahoo.com/maps_result?ed=Lz2FO.p_0TpVKFWBuA124OtTr9dn&csz=Sunnyvale%2C+CA&country=us

Directions: Take 101 to Lawrence Expressway. Head south on Lawrence to Kifer (past Central).
Turn right on Kifer. Go 0.5 miles on Kifer and turn right into the Credit Union parking
lot. Entrance is on the back side of the building.
Time: 6:30pm: Fast Food & drinks ($1 Donation Recommended towards Refreshments)
7:00pm: Announcement
7:05pm: Talks starts

Abstract:

Some years ago I upgraded a Microsoft Fortran compiler from PowerStation 1 to PowerStation 4, hoping to gain the advantage of a true 32-bit memory model. Quite unexpectedly, the upgrade took me from Fortran 77 to something called Fortran 90, and this ultimately proved far more exciting than the "mere" transition from 16 to 32 bits. Fortran 90, and its current successor Fortran 95, breaks with the rigid formatting conventions of earlier Fortran; it introduces dynamic memory allocation, derived data types ("structs"), operator overloading, and other modern language features. Of greatest value to me personally is the array notation, which is very similar to Matlab's: this allows a natural expression for array operations, which simplifies coding and simultaneously opens the door to high-performance execution on parallel hardware. I've chosen this topic because many of my colleagues have had no inkling of this development -- at any mention of Fortran they simply visualize the classical dialect and are understandably puzzled at my enthusiasm. This is too good to be a well-kept secret, so I wish to offer an overview of modern Fortran and illustrate, with examples from my own work, how empowering it has been for me.

Biography:

Dr. Matthew Halfant has had a wide range of professional experience. He was a Post Doctoral Fellow in the Mathematics Dept. of IBM's Thomas J. Watson Research Center, taught for three years at The Evergreen State College, then returned to T.J. Watson as a Research Staff Member in Computer Science. Following that he took a position as Senior Scientist, then Director of Engineering, at Bedford Computer -- the company that developed WYSIWYG page composition for typesetting long before the era of desktop publishing. After this he spent a few years as a Research Scientist with the AI Lab at M.I.T., developing Numerical Analysis libraries in Scheme. Following that he took a high-level technology position in the Digital Typeface Division of AGFA Compugraphic, before becoming Manager of Font Technology at Apple Computer, where he lead the team that launched TrueType. To avoid being "typecast", his next role was that of Architect at cc:Mail (Lotus), in which he demonstrated the power of rapid prototyping in accelerating the design of a next-generation e-mail system. In 1995 he left Lotus to become the first hired employee at startup VMLABS, which developed the award-winning NUON DVD player, based on its proprietary media processor. As VP of Software Development, he assembled the strongest team he'd ever had the pleasure of working with. The company was bought by Genesis Microchip in 2002, which is where Dr. Halfant may currently be found.

Chapter web: http://www.ewh.ieee.org/r6/sps/