

## REFLECTIONS ON THE KAILATH CONFERENCE

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It was a great privilege to be able to attend Prof. Kailath's Birthday Conference and Dinner. There's a sign on an eating establishment near MIT that says, "Some of the smartest people in the world eat here." An extraordinary number of the smartest people in the world gathered at Stanford to honor Prof. Kailath. The list of speakers is in the record but what was truly astonishing was the list of those who were not called upon to speak but came great distances to listen, to share and to give testimony to Prof. Kailath through their presence. I personally felt like a kid who had somehow wandered into the Yankee clubhouse by mistake. While Mickey Mantle and Yogi Berra may have been absent, in their place I found the names from the cover pages of nearly every important textbook and seminal paper I had ever read. More importantly, the names came complete with the on-line wit and wisdom of the brains behind the papers. In this setting I was stimulated to listen, to conjecture, to muse, to ponder, to think deeply, to laugh, and to renew the joy of work we get to do.

The format of the conference allowed the full benefit of the assembled knowledge to be tasted and savored like a tasting of great wines. Though the speakers were instructed to present their ideas without equations, most speakers interpreted this in an engineering sense, producing zero equations for large values of zero. The balance that was struck produced thoughtful presentation accessible to all and revealing the true nature of the profoundly simple concepts needed to solve complex problems.

I participated through the four days and managed to hang in through almost every talk with significant understanding. Prof. Kailath, unbelievable but not unexpectedly, had something new and relevant to add to every talk. I understand that a great story teller had an act where the audience would shout out any subject and he would respond with an appropriate joke. I came to believe that Prof. Kailath could respond to any subject within the four fields covered by the conference with a conjecture, a theorem, or an application. It was truly an amazing display of virtuosity.

What had to be the most impressive part of the gathering was the depth of insight and philosophy that was offered. The presentations dealt not with technical extension and epsilon additions to existing principles, but with serious, penetrating analyses of those fundamental principles and with philosophical discussions of how research does and should happen. This conference was not another of the all too often repeated sessions of, "Can you top this?". Egos were checked at the door as speakers searched

to expose and present the fundamental concepts that they had learned with and through Prof. Kailath. Indeed, we were learning about learning.

I came to the conference also expecting to hear something of a roasting of Prof. Kailath with stories of projects that had flopped, ideas that had turned sour and general pratfalls that often come with overreaching. I was actually somewhat disappointed with this aspect. Outside of Prof. Kailath's apparent lack of understanding of the role of the man in the loop of an automotive system, one speaker after another seemed to strain to find an anecdote of a Kailath foible. The situation was resolved by the following explanation that speaks much of Prof. Kailath's personality. As best I can recall the speaker related, "Tom has such an incredible sense of balance that he avoids the excesses that create funny stories even though he attacks life with spirit and a sense of adventure." For me, this is a lasting characterization of Tom Kailath, the man.

Perhaps the most satisfying impression of the conference is that Prof. Kailath seems to have passed many of his qualities on to his students, many of whom themselves are teachers with students. Indeed, Prof. Kailath represents a branching point of an exponentially growing tree of dedicated learners and teachers passing concepts, techniques and, most importantly, firmly rooted values to generations of researchers who can only hope to match Prof. Kailath's productivity but who will be out there passing on the fundamental values taught and practiced by Prof. Kailath.

I never have had the opportunity to work with Prof. Kailath but I am one of the many who have been affected by his writings and his sphere of influence and I am now one of the few who have had the opportunity to gain some insight into why he could succeed like he has. I thank the group that organized the conference for this opportunity.