With a strong economy and business outlook, salaries for engineers in high tech industries have increased significantly—by as much as 18% in some cases.

Our most comprehensive survey ever!

The new 1985 High Tech Engineering Salary Survey and Career Planning Guide is based on contacts with almost 10,000 engineers and over 1,000 firms that hire them. Included is a review of salaries at thirty-four positions and experience levels. So no matter if you’re in design and development, manufacturing, test, quality control, software/engineering sales, marketing, technical support or management, you’ll learn whether or not your salary is keeping pace with your peers—and what you can expect to earn as you advance your career.

In addition, the new Survey includes many charts, exhibits and graphs which are designed to help you get a thorough understanding of emerging career trends and what you could do to capitalize on them.

Free to engineers

The new Survey is available without charge. Since we first opened our doors, more than 100,000 Surveys have been distributed to engineers who want to move up, but are determined to realize their full potential. You owe it to yourself—especially if most of your career lies ahead—to call or write today.

Call today

To get your free copy, call the Engineering Career Associates office nearest you. Or, if you prefer, write the address listed below. Either way, we’ll mail a copy to you in strict confidence.

Write: Engineering Career Associates
1544 Route 22
Suite 208
Wayne, N.J. 07470
(When writing, please include your title.)
How Should Engineers Manage Income Taxes

“How Should Engineers Manage Their Income Taxes?” is the title of the February 26, 1985 meeting of NY/NJ Chapter of Engineering Management Society. Jerome Alter, CPA, will be the speaker.

About The Talk

Tax laws are changing at an unprecedented high rate of speed, becoming more important than ever for engineers to keep up with the latest tax savings opportunities. The money savers have by now knowing the tax laws go right into their pocket without any deductions.

About The Speaker

Mr. Jerome Alter is a certified public accountant and owner of his own CPA firm at 276 Fifth Avenue, NYC. He received his BA degree from City College of New York. Mr. Alter worked as a CPA for Seidman & Seidman, and Gluckman, Schacht and Greenberg, and became vice president in charge of finance at the Rex Baby Carriage Manufacturing Co. He is a member of the American Institute of Certified Public Accountants and the New York State Society of Certified Public Accountants.

NJ PACE Meetings

Monthly meetings of the North Jersey PACE Committee will be held at the ITT Tower Lobby, 500 Washington Avenue, Nutley, NJ, at 8 PM on the second Wednesday of every month. Free refreshments will be offered at all meetings.

There are many active PACE Projects funded by the USBA which you benefit from. This is the chance to learn about them and get your input.

See the page for details and a Registration form.

Costs for this video conference are: $75 to IEEE members; $175 to non-members; $25 to full-time IEEE student members; $75 to full-time non-IEEE students.

This video conference is held on site at the following locations: WNET 365 at 28 N. Street, N.Y. and - Busch Campus Center, Rutgers University, Piscataway, N.J.

Directions to the Busch Campus Center:

From the Garden State Parkway, take Exit 18 and take route 18 to New Brunswick.

Continue along the new extension, follow signs to Piscataway.

Cross the Raritan River on the new Lacey Bridge.

The light at River Road. Continue straight through light on Lacey’s Lane.

At the next light turn left onto Davidson Road.

Turn left at the left turn signal (Burlington Mall Rd.).

The center is on your right just past Fidelity Union Bank. Parking is available in two adjacent lots near the center.

For additional information and to make an advance reservation for the Electro 85, please call (201) 544-2334, Manuel Correa (914) 681-6484 or Tibor Binton (610) 929-0300. Ext. 3478.

Membership in IEEE or Engineering Management Society is not prerequisite for attendance. There is no charge.

Radar Conference

The 1985 IEEE ASME Joint Radar Conference will be held at the Roosevelt Hotel in New York on April 16 through 18, 1985. For additional details contact Tom Marple, NJ Transit, 95 Orange St., P.O. Box 720, Newark, N.J. 07101 (201) 648-7964.

Robot Dynamics And Control "Video Conf"

The North Jersey, New York and Princeton Sections of the IEEE are holding an evening seminar on “ROBOT DYNAMICS AND CONTROL.” Presented in conjunction with the IEEE Educational Activities Board this One-Day Live Videoconference via Satellite Network will be held February 27, 1985.

The videoconference will emphasize various dynamic methods for control of general purpose robotic manipulators. It will examine several different strategies for accomplishing accurate robot arm control in a practical environment. This includes coarse sensing and fine sensing through several techniques in a constantly changing environment.

The presentation will cover a large number of techniques and sensing which we often take for granted. Applying that to be duplicated by a robotic manipulator is not a simple task. It is rather complex. However, great strides have been made.

In this videoconference you will see how the technology is today and we design issues in research are going. See the page for details and a Registration form.

Electro '85 Opens one day after the New York Metropolitan IEEE Council presents the most prestigious panel of Engineering Workshops revolutionary leaders. David Stamm, VP Engineering Dairy Systems; Stephen Sverling, VP Engineering; Mentor Graphics; Thomas McWilliams, VP Valid Logic, winner of 1984 IEEE McDowell Award for his work on Structured Configurated Logic, and Bruce Gladstone, President, FutureNet provide an unusual spectrum of views on this revolutionary topic.

Andrew S. Rappaport, President, The Technology Research Group with Justin E. Harlow, Faculty, Jankowski, Gramman Aerospace; and Kathy DeCasle, Harris will present their perspective as technical engineering workshop leaders.

Concluding with a panel discussion responding to audience questions, this tutorial is presented for the benefit of those who have not yet joined the engineering revolution. It should help answer the question: “What CAD tools will be used by the survivors of this design revolution?”

This seminar is co-sponsored with the IEEE Computer Society and organized by John Andrews, Chair, who will act as moderator.

Fiber Optic Applications in Electrical Power Systems

The content will include a systematic treatment of fiber optics (components, waveguides and cable connectors), various modulation techniques, economics and applications in communications, power and control. The tutorial will conclude by covering what’s next and how to start implementing the technology.

The topics and speakers are:

FIBER OPTIC BASICS — A.J. Saanto, Foundation Instruments, Inc., Ottawa, ONT.

VARIOS MODULATION TECHNIQUES USED IN PRACTICE — A.L. Pachynski, Rockwell International, Dallas, TX.

ECONOMICS OF LIGHT WAVE OVER CONVENTIONAL COMMUNICATION METHODS — S.A.L. Bhate, Siecor/Optical Cable Inc., Hickory, NC.

GENERAL INTRODUCTION TO FIBER OPTIC APPLICATIONS — D.C. Erickson, Bonneville Power Administration, Portland, OR (and course moderator).

COMMUNICATION APPLICATIONS — D. Pineda, Institute of Electrical Research, Cuevaora, Morelos, Mexico.

MEASUREMENT APPLICATIONS — R. Malieki, IREQ, Varennes, Quebec, Canada and R.E. Hehner, National Bureau of Standards, Washington, DC.

CONTROL APPLICATIONS — S.C. Sun, Westinghouse, Coral Springs, FL.

What’s Next and How to Get Started — D.C. Erickson, Bonneville Power Administration, Portland, OR (and course moderator).

The coordinator for this course is Len Rubenstein, Stone & Webster.

IEEE Tutorials Registration

One registration per University, please.

Photocopies accepted

IEEE/USA Tutorials Non-Member

$165

$205

$175

$215

$150

$190

$150

$200

These prices are for advance registration received BEFORE April 11, AFTER April 11 added $50 to the fee of the tutorial.

Name (Please Print)

Address

City, State, Zip

Telephone

Name accepted.

Enclosed is a check for $... payable to IEEE METSEC, 614 Hammond Street, Chestnut H4, MA 01817.

Registrations not accepted without payment. Names are required for registration.

*IEEE/USA Tutorials - February 1985 - Page 2
Six Tutorials Featured at Electro/85 and Mini/Micro

The IEEE Metropolitan Sections Activities Council (METASAC) and Electro/85 will cosponsor six special-fare tutorials on Monday, April 22 from 9:00 am until 5:00 pm in the Sheraton Centre Hotel Ballrooms in New York City. Registration for these tutorials must be accompanied with the coupon at the end of this article. Included in each tutorial fee are course materials, lunch and Electro/85 registration which is also valid for Mini/Micro Northeast. We urge you to register early to insure that there will be room for you.

Artificial Intelligence (AI)

This course is designed for computer software specialists, engineers and technical managers who are, or will be, responsible for AI applications. It will cover fundamentals of AI with special emphasis on building expert or knowledge-based systems (ESs or KBSs). Through proving, learning approaches, and AI languages will be covered. Important applications and AI's future direction will be discussed.


The speakers are:

Professor Robert Hong (Tutorial Coordinator) is Technical Advisor to Grumman's Director of Systems Engineering, and teaches graduate AI/Robotics courses at Poly. He is Chairman of AI/Robotics for Long Island IEEE, and was a member of the PA Study Group OSD/DA.

Larry T. Wos, PhD, is a Senior Mathematician of Argonne National Laboratory. He is President of the Association of Automated Reasoning, and is co-author of the book entitled Automatic Reasoning — Introduction and Applications.

Diane Tosh is Supervisor of AI for Melpar, E-Sytems. She is Chairman of ASRobotics and Deputy Chairman of Computer Society for IEEE, Wayne, PA.

Charles Bobolis is a Senior Engineer with Grumman Aerospace Corporation, participating in AI. He is Deputy Chairman of AI/Robotics for Long Island IEEE.

The FCC Closes In On Computer Manufacturers

More than any other federal agency, the Federal Communications Commission directly regulates all types of electronic data processing equipment. All such devices are regulated under Part 15 of its rules governing emission characteristics. This seminar will discuss these regulations and the means by which the FCC spots violators and how they go about enforcing the rules. One half of the seminar will also be dedicated to designing equipment for compliance at the printed circuit board level with a view towards complying at minimum cost.

Any devices that hook to the telephone network must also be registered under Part 68 of the FCC rules. The regulations and enforcement mechanisms are also reviewed. Methods for designing interfaces, including sample schematics, are presented and discussed.

The seminar speaker is Mr. Glen Dash who is a Director of Dash, Straus & Goodhue, Inc. and a partner of Mohn, Franklin & Goldenberg, PC. The panelists and coordinators of this seminar are Messers. Dash, Goodhue and Straus.

Speech Synthesis/Recognition

The use of speech as a communication interface between man and machine has been the goal of scientists since the advent of the computer age. Besides its novel value in giving a machine human-like characteristics, it provides for more rapid communication between man and machine, while freeing the user's hands to perform tasks other use tasks. Recently, the state of speech synthesis has become quite well developed, with the capability to pronounce any word or phrase in a human-like manner. On the other hand, speech recognition, due to the inherent abstraction and complexity of language, has posed numerous problems. Nevertheless, much progress has been made in the area of speech recognition in the last few years. This tutorial aims to present a brief review of speech synthesis techniques and discuss in detail four major innovative applications of speech recognition systems.

The topics and speakers are:

- THEORY AND APPLICATIONS OF COMPUTER SPEECH SYNTHESIS — John Caster, MCC Human Interface, Austin, TX
- COMPUTER ARCHITECTURE FOR SPEECH RECOGNITION — Roberto Bisani, Carnegie Mellon University, Pittsburgh, PA
- LARGE- VOCABULARY ISOLATED WORD RECOGNITION AT National Laboratory — Steven de Souza, IBM Watson Research Center, Yorktown Heights, NY
- CONVERSATIONAL MODE SPEECH RECOGNITION SYSTEMS — Steve Levinson, Bell Laboratories, Murray Hill, NJ

SPEAKER VERIFICATION TECHNIQUES — Richard Mann, Rutgers. University. (Tutor and moderator of this seminar), coordinator is George Hung, Rutgers University.

The Entrepreneur and the Venture Capitalist

Questions concerning venture, risk and buyout capital abound. If left unanswered, these questions will hinder the early development of high technology companies. The average engineer or scientist may not be familiar with business and financial procedures. This seminar is not to their discredit since these procedures can become quite complex. Venture capital organizations assist young companies in solving these unique business problems. Besides capital investment, some organizations also provide business expertise and other financial resources to support portfolio companies through difficult periods.

This tutorial provides a setting for the entrepreneur and the venture capitalist to meet and exchange information. Specific topics will include product viability, market research and market competition. Requirements for becoming a portfolio company will also be presented.

The panel moderator is Dr. Sotiris J. Valiavilos, President of Physical Acoustics Corp., Princeton, NJ with James Wherthington of RCA Labs, Princeton, as coordinator.

IEEE 9th VIDEOCONFERENCE
FEBRUARY 27, 1985
11:00 A.M. - 4:00 P.M. EASTERN TIME

SEMINARS VIA SATELLITE

This videoconference will emphasize various dynamic methods for control of general purpose robotic manipulators. It will examine several different strategies for accomplishing accurate robot arm control in a practical environment. Key aspects include: sensor/actuator design and control, including specific techniques in a constantly changing environment. You will see where the technology is today and where the design issues are going.

SUPPORTING DOCUMENTATION - A Complete Set of Notes
- Charts
- Graphs
- Bibliographies
- Presenters' Biographies

PROGRAM OUTLINE
- Dr. Alan Desroschers
  IBM — Editor de Sousa, IBM Watson Research Center, Yorktown Heights, NY
- Dr. Richard P. Paul
  Modern Manipulator Task Description
  Motion Trajectories
  Manipulator Kinematics
- Dr. Steven Dubowsky
  Advanced Control Concepts
  Aided in sensory capability and potential for miniature systems
- Dr. Daniel Whitney
  Optimal Control

TECHNICAL CONSULTANT
Dr. John D. Hoecker
School of Engineering
Rensselaer Polytechnic Institute

PRESENTERS
Dr. Wayne J. Book
Computer Integrated Manufacturing Systems Program
Georgia Institute of Technology

Dr. Richard P. Paul
Department of Mechanical Engineering
Massachusetts Institute of Technology

Dr. Daniel E. Whitney
Charles Stark Draper Labs

REGISTRATION FORM
Please register me for the “Robot Dynamics and Control” videoconference on February 27, 1985 at 11:00 A.M. at the following conference.

- [ ] Home Phone ____________ Home Address ____________________________
- [ ] Commercial Phone ____________ Commercial Address ____________________________
- [ ] Extension ____________________________

Company Name ____________________________
Company Address ____________________________
Company Phone ____________
Company Fax ____________
Company E-Mail ____________

You may recall the original Simpson-Mazzoli Bill required the return home of all foreign students for two years, however the AEA survey and press releases predicted severe shortages of engineers and resulted in the waiver for students studying engineering and science. The damage was done—IEEE’s “SPECTRUM” and “THE INSTITUTE” gave the American Electronics Association a huge amount of free unchallenged coverage. Also included was much innuendo about engineer obsolescence. It was later concluded that the AEA’s survey and press releases were unsubstantiated and made exaggerated claims. The IEEE’s publications never made any retractions or efforts to correct their reports. They never challenged AEA’s publicity and today both IEEE publications and AEA are working together.

All of this has influenced public opinion. At an IEEE Manpower Task Force meeting in the Silicon Valley a young personnel manager from HP stated that his engineers are obsolete four years after they graduate. This individual is in a position to do EE some good and some harm. With his opinion, what would you predict for the future of your young engineers?

Many experienced engineers believe IEEE is a four-letter word. EDN’s 1984 survey revealed that Engineers were unhappy with IEEE. EDN said: “Although only 40.8% of those surveyed belong to the IEEE, both members and non-members expressed increasing dissatisfaction with IEEE’s representation of the engineer. More than half (51.6%) believe IEEE representation is poor, while only 10.3% claim it’s good.”

We want to improve their opinion if we continue to make the engineer an object of ridicule. EDN also noted that the younger lower paid engineers have a more favorable opinion of IEEE. It would be interesting to see if they retain their favorable opinion after five or ten years of industrial experience.

Most engineers don’t look at IEEE too closely. If they did they might also notice the irreplaceable damage we have done by permitting IEEE to be used in a detrimental manner. Perhaps this is why many of us are involved in IEEE; there is always so much room for improvement.

We can’t begin to consider Continuing Education here, but obviously if there has been little success in selling it to engineers then perhaps they do not want it in its present form or they do not see it as the panacea academia says it is. Some contend underutilization of engineers is a problem, but they still don’t believe one becomes dead, dumb and blind at age 35.

Ephraim Weiss, from the Boston Section and a member of the Manpower Task Force said: “Such reports should not be given typical electronic IEEE publications, particularly when they may be biased due to their sponsorship. However, we must also be prepared to provide a measure of journalistic support to IEEE publications in order to assist them in covering such reports. They must at the very least be prepared to present such reports with journalistic skepticism, and should NEVER issue an article based exclusively on a publicity release, regardless of the source.”

Despite all of this, however, and perhaps an apology are due. Jose B. Cruz is the Vice President for Publications Activities and is responsible to the membership for “SPECTRUM” and “THE INSTITUTE.” He will be nominated for the position of President-Elect during 1985. If Professor Cruz doesn’t clean up this act quickly he might just as well stay right where he is at the University of Illinois.

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