

## **PAUL A. T. WOLFGANG**

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**SUMMARY** — Mr. Wolfgang has over 30 years of experience in all aspects of real-time computer system design in a wide range of applications. He has served in a lead or management role throughout his career. He is familiar with numerous computer architectures ranging from microprocessors to large main-frames. He is also familiar with numerous high-level languages including Ada, C++, Pascal, C, FORTRAN, PL/1, COBOL, and LISP.

### **PROFESSIONAL EXPERIENCE**

**Temple University** (since Sept. 1985) — Adjunct through Spring 1999, Full time Dean's appointment since Fall 1999

Teaches courses in Data Structures & Algorithms and Software Engineering both at the undergraduate and graduate level. Currently using C++ in a graduate level introductory data structures course. Also serves as adviser to independent research study students and served on two Ph.D. examination committees. Areas of interest include application of C++ and Ada, Object Oriented Analysis and Design, Software Metrics, Software Process Assessment and Improvement, and Software Project Planning and Tracking. Contributed to the text *Problem Solving, Abstraction, and Design Using C++* by Friedman and Koffman. Reviewed draft of *Algorithms, Data Structures, and Problem Solving with C++*, 2E by Weiss.

**Boeing Philadelphia** (since Jan. 1986) — Manager-Software/Computing Systems Design (through March 1998) Embedded Software Engineer (Since March 1998)

### **Project Responsibilities:**

**RAH-66** (Since 1999): Re-design the Aircraft Fault Isolation/Fault Detection Computer Software Component of the Mission Equipment Package Management and Control Computer Software Configuration Item. Resolve outstanding problem reports with the core software. Subcontract management of the Ada Compilation System vendor.

**CH-47SD** (1997 - 1998): Manage the supplier's software development of the Advanced Cockpit Management System including requirements and design documentation review/approval, track problem resolution. Prepare proposal sections. Coordinate/review supplier proposal inputs. Participate in technical negotiations with customers and suppliers.

**RNLAF CH-47** (1994 through 1996): Manage the supplier's software development of the Advanced Cockpit Management System including requirements and design documentation review/approval, track

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problem resolution. Reviews supplier change proposals. Reviewed the software changes to the Full Authority Digital Engine Control (FADEC) software.

**MH-47E** (1988 through 1994): Managed the supplier's software development of the Integrated Avionics System. Co-chair the formal design reviews (PDR, CDR, etc.), review/approve requirements and design document, and track problem resolution. Reviews supplier change proposals, conducted fact-finding, and participated in contract negotiations. Received two quality pride awards for his contributions to the fact-finding and negotiation process. Reviewed the software changes to the FADEC.

**RAF CH-47.** Reviewed the software design of the FADEC to verify the proximate cause of a severe failure. Determined that there were no similar design flaws. Verified that corrective changes were incorporated. Reviewed the software design of the Secure Communications Control System. Reviewed the software design of the FADEC block upgrade.

### **Functional Responsibilities:**

Leader of SEI assessment and improvement efforts at the Helicopters Division (1994 through 1998)

Represent the Helicopters Division on the company wide Software Resources/Skills Committee (1986 through March 1998).

Managed the "Salary Totem" for all software engineers at the Division (1995, 1986 through 1991).

Managed the "Retention Totem" for all software engineers at the Division (1986 through 1991).

Defined the initial Software Engineering Environment – both hardware and software.

Hired the initial core of software engineers.

### **Computer Sciences Corporation** (July 1977 - Jan 1986) — Lead Scientist

Served as principal investigator for Software Productivity IR&D. He was responsible for the research activities of the other investigators assigned to this project. Goals of this research are to determine the factors affecting software productivity and to investigate methods for improving software productivity. Included also within this research is the investigation of the productivity impacts of transitioning to Ada.

Served as technical manager for the P-3C Update III software development project. As technical manager, he was responsible for the overall technical conduct of the project, including review of program design and requirements specifications, establishment of project programming standards, and representation at design review meetings with the customer and related government agencies. Also provided technical assistance to the project manager and other staff members as required and served in the absence of the project manager as necessary to solve day-to-day problems. While in this role he also developed project management aids for project scoping, scheduling, and tracking.

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Systems Engineering support for Aegis/DDG, particularly in the area of ASW integration with the rest of the combat system. This work involves review of performance, design, and interface specifications as well as preparation of these specifications. Also prepared automated aids to ensure specification consistency.

Directed a program to upgrade a training device by installing a system of distributed microprocessors. The existing system was designed using discrete logic and the upgrade involved design of special interfaces to allow the microprocessors to replace the driving circuitry yet retain existing displays and controls.

### **Analytics** (July 1972 - July 1977) — Senior Associate

Participated in a variety of projects involving the integration of mini-computers into larger systems. In some projects he served as the project manager and in others as the lead software designer. Projects included a Acoustic Field Artillery Location System, Remotely Monitored Battlefield Sensor System, and an engineering prototype processor for a meteorological dropsonde data processor.

### **Pennsylvania Research Associates** (July 1968 - July 1972). — Project Engineer

Worked on development of a real-time hybrid radar landmass simulator, a ship piping design system, and software design for an airborne ESM system.

**EDUCATION** — BS in Electrical Engineering and graduate work in Computer Science, University of Pennsylvania. Received a Ford Foundation Fellowship for graduate study at the University of Pennsylvania. Elected to Tau Beta Pi, Eta Kappa Nu, Sigma Tau, and Pi Mu Epsilon honor societies.

**PROFESSIONAL ASSOCIATIONS** — Member of the Institute of Electrical and Electronic Engineers and the Association for Computing Machinery. Serves as advisor the *IEEE Spectrum* “Tools and Toys” column. Served on the IEEE Computer Society standardization working groups on Software Productivity Metrics and Software Quality Metrics. Participated in the balloting of numerous IEEE Software Engineering standards. Served as chair of the Delaware Valley Chapter of the ACM (1975-1977 and 1983-1984). Has served as a judge of the ACM regional programming contest (1978 through 1993) and has served as regional contest director (1986 through 1992). Served chairman of the board of Conference on Software Technology, Inc. which conducts the annual National Ada Technology Conference from 1985 to 1986.

### **PUBLICATIONS**

Wolfgang & Song “Integration of the STL and the Microsoft Foundation Class” *SIGPLAN Notices* vol. 34, no. 6 (June 1999).

Friedman & Wolfgang “Choosing Ada Tasking Models for Real-Time Systems” *Defense Electronics* vol. 19, no. 4 (April 1987)