Kenneth W. Chapman
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Specialization

Machine and computer vision, image processing, Statistical Process Control, pattern recognition, alignment, autofocus, defect detection, 3D reconstruction, classification, embedded programming, data acquisition and analysis, robotics, real-time and embedded computing, time domain image processing, background suppression, factory automation, and conversion of MatLab routines to C/C++.

Programming Languages: C/C++/C#, Python, Assembly, BASIC
Development Tools: Visual Studio, Team Foundation, QT Creator, KDevelop, Eclipse, Subversion
Machine Vision and Image Processing Libraries: Cognex, Matrox, OpenCV, IPP, DVT, ESI.
GUI Kits: Windows Forms (.Net), MFC, QT, wxWindows
Other: Fluent in Spanish, Sales/Marketing experience, University and industry course development and delivery, 2 Machine Vision patents (6,901,160 and Pending)

Work History

Note: In the list below ESI purchased Intelledex and ATS Oregon spun off from Intelledex.

Senior Vision Engineer - 5/2007 to Present Centice Corporation, Morrisville, NC

Senior technical resource for image processing and machine vision development at a start-up company that provides drug classification products to retail pharmacies, hospitals, and mail-order pharmacies. Wrote algorithms from scratch to combine with Raman Spectroscopy to assure the right drugs are in the bottle. Vision algorithms identified and measured 2D and 3D shapes, colors, and symbols through the bottom of amber pill bottles. Used Hough transform, geometric pattern matching, morphological sieves, feret profiles, FFT, Color space moment analysis, RGB/HIS/LAB statistics, morphology, a variety of convolutions, and other techniques. Developed lighting, optics in addition to algorithms.

Senior Vision Engineer - 6/2003 to 5/2007 (4 years) ATS Oregon, Corvallis, OR

Senior technical resource for image processing and machine vision development at the Oregon Division of one of the largest systems integrators in the world. Major system solutions included the development of vision algorithms, lighting, and optics to 1) guide a laser to perform precision cuts and welds on the leads of stacked memory chips, 2) return the position and characteristics of packaged medications on a conveyor to a robot for pickup 3) high speed defect identification and classification in a variety of substrates, 4) vial, stopper, and label inspection for large drug discovery and manufacturing companies, 5) precision measurement of features on ceramic, metallic and plastic surfaces, and 6) precisely align and deposit multiple drops of liquids onto silicon and plastic substrates. Developed new libraries and modified current ATS libraries using "best practices" so the algorithm base was more easily reusable and extensible by the entire vision team at ATS. Developed machine vision algorithms for glass, medical device, pharmaceutical, semiconductor, ceramic filter, and other products and processes.

Senior Vision Engineer - 2/1984 to 8/1991 and 7/1997 to 6/2003 (13½ years) ESI, Portland, OR

Successfully developed image processing algorithms to inspect chip capacitors at a rate of 35 parts per second, processing images at a rate of 600 images per second. Techniques included both stochastic and deterministic methods. Worked on the development of package visual inspection capability for Chip Scale Packages (CSP), Ball Grid Arrays (BGA), Pin Grid Arrays (PGA), and other electronic packages.

Applications Engineering Manager – Intelledex, Corvallis, OR was purchased and became the ESI Vision Products Division in 1991. Worked with client engineers to apply image processing, robotic and machine vision technology to solve process and quality problems on semiconductor, printed circuit board, consumer product packaging, mechanical assembly and other manufacturing operations. Clients included Sony, General Electric, Motorola, Delco, Thomsen, and others. Marketing Manager - Developed and

implemented marketing plans for both mature and new products. Performed market research to define and develop a new vision system that caused vision system sales to move from accounting for around 5%25 of company sales to over 40%25 of company sales. Regional Sales Manager - Exceeded regional quotas more rapidly than any previous new sales manager in the seven states Southeast region. Developed and managed accounts at Motorola, Northern Telecomm, and others.

Engineering Manager - 12/1994 to 7/1997 (2½ years) Mountain Crate Company, Newberg, OR

Managed the development of manufacturing processes including plant layouts, hard and soft automation, quality plans, etc. for the manufacture of wood products. Extensive use of microcontrollers and PLC's on continuous flow manufacturing lines.

Lead Automation Engineer - 6/1992 to 11/1994 (2½ years) Motorola, Boynton Beach, FL

Lead a group of engineers in the design and development of factory floor automation including robotics, machine vision, SMT pick and place equipment, quality control systems and other.

Research Engineer - 9/1991 to 5/1992 Texas A & M University, College Station, TX

Continuation of technology transfer work performed with University of Texas at El Paso. Design and process development contracts secured with TETREP and Thomsen Consumer Electronics.

Machine Vision Laboratory Manager - 1/1989 - 6/1990 University of Texas at El Paso, El Paso, TX

On leave from Intelledex to develop UTEP's ability to transfer manufacturing technology to industry in Mexico, Texas, and New Mexico. Established relationships, secured contracts, and performed applications with companies such as Delco Products, Dale Electronics, Ford, Honeywell, and Asarco. Lectured at Universities such as ITESM and ITCh in Mexico and NUS in Singapore. Performed joint research with Texas A & M. Published two refereed journal articles.

Volunteer Machine Vision Research - 2004 to Present USGS and NCSU, Portland OR and Raleigh, NC

Wrote machine vision programs to measure the size and distribution of particles in real-time in streams, lakes, and other bodies of water. Worked with USGS scientists in Portland to develop lighting and optics. Wrote programs to count and measure particles in 2D and 3D and plot the results on a Wentworth scale. Wrote code to perform dynamic background suppression so that a piece of equipment in a stream can ignore dirty inspection surfaces and know when it needs to be cleaned. Particle sizes measure from 1 micron up. Working with North Carolina State University Agricultural Engineering scientists to develop machine based systems to make real-time measurements of water height and flow rate in rivers and streams during night and day under all weather conditions. Both of these are ongoing projects.

Education

12/1990 University of Texas at El Paso, El Paso, TX
- Master's Degree
- Industrial Engineering – Thesis: Computer Vision Based Print Screen Positioning

6/1981 Oregon Institute Of Technology, Klamath Falls, OR
- Associate Degree
- Computer Systems

6/1978 Oregon State University, Corvallis, OR
- Bachelor's Degree
- Business Administration