**Swart, Calvin B (Cal)**

IBM Senior Technical Staff Member, Cal Swart, joined IBM Research in the fall of 1982. Since then he has worked on a variety of projects ranging from object-oriented toolkits, handheld applications, and nextgen web applications.

See profile at http://researcher.watson.ibm.com/researcher/view.php?person=ibm-Calvin.Swart

**Current and Prior Positions**  
  
IBM Retiree Supplemental  
2016 - present  
  
IBM Research  
Staff  
1982 - 2016  
  
Com/Energy  
Programmer / Systems Programmer  
1974-1982  
  
Honeywell  
Electronic Technician  
1972-1974  
  
US Air Force - Sergeant  
Radio Repairman  
1970-1972  
  
Air Force Reserves - Sergeant  
Radio Repairman  
1972-1976

**Publications**

Retrospective validation of the laparoscopic ICG SLN mapping in patients with grade 3 endometrial cancer  
Perceptions of Risk in Mobile Transaction  
Productivity in parallel programming: A decade of progress  
A decade of progress in parallel programming productivity  
An open source approach to information scent  
Physical Accessibility of Touchscreen Smartphones  
Perceived Security Risks in Mobile Interaction  
Exploring pinch and spread gestures on mobile devices  
An Open Source Approach to Information Scent  
Perceived Security Risks in Mobile Interaction  
Exploring pinch and spread gestures on mobile devices  
Physical Accessibility of Touchscreen Smartphones  
Sketching Data: Lessons Learned From a Formative User Evaluation  
Wii remote as a web navigation device for people with cerebral palsy  
Biometric Authentication on a Mobile Device: A Study of User Effort, Error and Task Disruption  
SketchGraph: gestural data input for mobile tablet devices  
Understanding the role of age and fluid intelligence in information search  
Age-specific predictive models of human performance  
Reactive information foraging: an empirical investigation of theory-based recommender systems for programmers  
Sketching Tools for Ideation  
Sketching tools for ideation (NIER track)  
Extending predictive models of exploratory behavior to broader populations  
Sketching tools for ideation: NIER track  
Self-selection of accessibility options  
Accessibility challenges and tool features: an IBM Web developer perspective  
An introduction to programming with X10  
Towards a Tool for Keystroke Level Modeling of Skilled Screen Reading  
Towards a Tool for Keystroke Level Modeling of Skilled Screen Reading  
Toward modeling auditory information seeking strategies on the web  
Designing for auditory web access: accessibility and cellphone users  
Reactive information foraging for evolving goals  
Using CogTool to Model Programming Tasks  
Business insight toolkit: Flexible pre-requirements modeling  
Using tagging to identify and organize concerns during pre-requirements analysis  
An overview of nanotechnology in Brazil (and its macro-challenges)  
Web accessibility: a foundation for research  
Towards an ecologically valid study of programmer behavior for scientific computing  
Towards an Ecologically Valid Study of Programmer Behavior for Scientific Computing,  
Towards Applying Complexity Metrics to Measure Programmer Productivity in High Performance Computing  
Browser augmentation  
Common & particular needs: a challenge to participatory design  
Accessibility works: enhancing web accessibility in Firefox  
Improving Web accessibility through an enhanced open-source browser  
accessibility Works: Web Access for an Open Source Browser  
Improving Web accessibility through an enhanced open-source browser  
Web accessibility: a broader view  
The VIP interface design system  
Palm OS Web Application Developers Guide: Including PQA and Web Clipping  
Summarization miniaturization: Delivery of news to hand-helds  
Summarisation miniaturisation: delivery of news to hand-helds  
Summarisation miniaturisation: delivery of news to hand-helds  
Designing an e-grocery application for a palm computer: Usability and interface issues  
Point-of-view: custom information delivery via hand-held devices  
Summarisation miniaturisation: Delivery of news to hand-helds  
Designing an E-grocery application for a palm computer: usabilityand interface issues  
Exploring A New Paradigm for E-Groceries  
Socially translucent systems: social proxies, persistent conversation, and the design of “babble”  
NetVista: Growing an Internet solution for schools-References  
NetVista: Growing an Internet solution for schools  
An Object-Oriented Toolkit for Visual Interface Design  
EDP effects on clerical workers  
Using CogTool to model programming tasks  
NetVista: Growing an Internet solution for schools-Author bios

**Patents**

Correcting systematic calibration errors in eye tracking data  
Suppression of authorization risk feedback to mitigate risk factor manipulation in an authorization system  
Creating tag clouds based on user specified arbitrary shape tags  
AUTOMATIC CAMERA SELECTION BASED ON DEVICE ORIENTATION  
DETECTING INPUT BASED ON MULTIPLE GESTURES  
Auf Zeichen beruhendes elektronisches System und Verfahren fur Enthaltensein  
In-betweening interactive states  
Mark-based electronic containment system and method  
Method and system providing viewing-angle sensitive graphics interface selection compensation  
Creating Tag Clouds Based on User Specified Arbitrary Shape Tags  
Method for automatically adjusting the rendered fidelity of elements of a composition  
Task-based evaluation of user interfaces  
Efficient navigation based on importance with audio output option  
Privacy-preserving method for skimming of data from a collaborative infrastructure  
INTERFACE CONTROL FOR SWITCHING BETWEEN DISPLAY REGIONS ON A DISPLAY  
Space-conserving interface control for presenting and manipulating multidimensional state  
INTERFACE CONTROL FOR PERFORMING SWITCHING AMONG DISPLAY AREAS ON DISPLAY DEVICE  
Method and means for controlling the concurrent execution of a plurality of programs on a computer system  
Look-up table based gamma and inverse gamma correction for high-resolution frame buffers

**Things I am proud of**

* Object-oriented ClassC programming
  + helped test and deploy ClassC library
* Object-oriented graphics classes
  + helped develop graphics classes
  + helped create object-oriented toolkit
  + developed airline seating demo using toolkit
* PS2 video card
  + tested the video API
  + developed application showing video in a window
* OS2 anti-aliased fonts
  + developed and deployed anti-aliased fonts in OS2
  + handed off to OS2 team
* OS2 embedded browser control
  + developed OS2 embedded browser control
  + handed off to OS2 team
* K12.net (NetVista)
  + bring internet applications to schools on a low-cost budget
  + developed internet applications for schools
  + developed installation routines
  + setup and maintained infrastructure
  + traveled to schools to install, setup, and test installation
* Palm Pilot Safeway home shopping application
  + developed shopping application on the Palm Pilot
  + helped develop backend support for the shopping application
  + deployed at Safeway UK
* Palm Pilot insurance application
  + developed insurance agent application
  + deployed for testing in Canada
* Visitor's/Applicant's web site
  + Created an applicant web site for people interviewing with IBM for scheduling their visit
* Web Adaptation Technology (WAT)
  + developed an IE plugin to allow low-vision users to modify web pages dynamically
  + developed installation routines
  + setup and maintained infrastructure
* accessibilityWorks
  + developed a Firefox plugin port of the WAT technology
  + developed installation routines
  + deployed at a school in NYC
  + worked with other organizations to install and setup in their facility
* Productivity assessment for parallel computing
  + setup and maintained infrastructure to test
  + developed routines to gather data
  + helped analyze data
  + X10 / X10DT programming and testing
  + able to show >10% improvement in productivity
* Mobile application login with face, voice and gesture
  + developed application to use face and voice as login methods on a mobile device
  + developed installation routines
  + installed and maintained backend infrastructure
* CogTool
  + prototyping tool that uses a human performance modeling to automatically evaluate how efficiently a skilled user can do a task on a design
  + helped deploy at IBM
  + developed installation routines
  + setup infrastructure for deployment
* Chef Watson
  + create recipes using Watson technology that have never before been cooked
  + [www.ibmchefwatson.com](http://www.ibmchefwatson.com)
  + setup and maintained infrastructure on Bluemix
  + setup and maintained backend process on VM
  + developed log analysis routines
  + deployed to IBM CSF infrastructure
* Maintaining researcher
  + Maintain researcher infrastructure
  + developed routines to upload photos and files
  + developed routines to access Bluepages data
  + helped develop and maintain interface to Google Scholar
  + developed LinkedIn interface to import profile
  + developed publications interface to Microsoft Academic
  + developed and deployed W3id login
  + maintained Watson Concept Insights (Piazza)
  + ported Piazza to new Red Hat VM
  + integrated Academy of Technology into researcher
  + troubleshoot and fix problems
  + test and deploy code
  + modified code to replace Piazza with IBM Skills Locator
  + migrated from tinyMCE 4 to tinyMCE 5
* Port Researcher to Bluemix
  + deployed SQL database(s) to Bluemix
  + deployed application(s) to Bluemix
  + deployed application(s) to Kubernetes
  + used Object Storage for pictures and files
  + developed routines to upload files and photos to Object Storage
  + used PHP S3 interface to access Object Storage
  + ported researcher from PHP 5 to PHP 7
* Group Support
  + supported the groups that I was in by setting up, maintaining, troubleshooting team laptops
  + setup and maintained group infrastructure
  + group IT support
  + go to person for troubleshooting problems
* Systems
  + Macintosh
  + Windows
  + Linux
* Languages
  + html
  + javascript
  + python
  + php
  + some java
  + some nodejs express
  + docker