# JAMES BOWMAN

Excamera Labs
1946 Pescadero Creek Road
Pescadero CA 94060
jamesb@excamera.com

## EXPERIENCE

CONSULTING ENGINEER FOR EMBEDDED/HARDWARE CLIENTS (2011-present)

Architect and implementer of five complete embedded SOC ASICs.
They include multiple onboard embedded CPUs with firmware in ROM.
Other projects include embedded video FPGA, home robotics, mobile GPUs.
Am a GNU GCC/binutils comitter and maintainer.

SENIOR SOFTWARE ENGINEER, WILLOW GARAGE (2008-2011)

Implemented the PR2 robot's 6-camera hard real-time video system, using Xilinx FPGAs
and Micron imaging sensors. FPGAs gathered and transmitted 6 synchronized streams of
uncompressed video to the robot's OpenCV-based vision system.
Also Willow Garage's senior engineer on OpenCV, the computer vision system. Wrote the
PR2's visual odometry / VSLAM system.

SENIOR 3D GRAPHICS ARCHITECT, NVIDIA (2001-2008)

Architect of the 3D graphics pipeline's massively parallel work distribution engine.
Also in charge of the full-chip constrained random test effort.

SENIOR ENGINEER, BELIEVE INC. (1999-2001)

SENIOR ENGINEER, 3DFX, INC. (1998-1999)

MEMBER TECHNICAL STAFF, SILICON GRAPHICS (1996-1998)

CONSULTING ENGINEER, MICROSOFT (1994-1996)

## EDUCATION

IMPERIAL COLLEGE LONDON, U.K. (1987-1990)

*B.Eng.* in Computing
Specialization: Computer Architecture

## EXPERTISE

Design and implementation of embedded hardware/software systems

Test-driven development, particularly for high reliability emebedded systems

Graphics, UIs, C, C++, Python, Forth, assembler, Verilog, FPGAs