Alison Chaiken

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Goal: leverage advanced vehicle technologies to minimize environmental impact and maximize public safety.

Summary: automotive industry systems programmer and Linux kernel engineer with device-physics background.

Professional interests: Consumer and commercial vehicle systems using Linux and RTOS at both systems programming and kernel level. Hardware adaptation for ARM. Automation via C/C++. git, systemd, system monitoring via BPF.

Full-time employment:

2020-: Software Engineer at Aurora Innovation Write system monitoring and Linux kernel test tools in C/C++. Merge minor RCU-related patchset to Linux kernel. Configure and patch the realtime Linux kernel for NUMA x86_64 system. Write and maintain an on-vehicle kernel monitor. Introduce pressure-stall metrics as a way to monitor system resource contention.

2019-2020: Vehicle Integration engineer at Peloton Technology

Design and prototype custom electronics-plus-code that adapts Peloton's standard products to individual truck platforms using C++, J1939 and CAN tools. Create a soft emulator for accelerator pedal via I2C-controlled PWM signals and test in-vehicle.

2016-2019: Senior Software engineer at Peloton Technology

Responsible for bootloader (C), realtime Linux kernel (C), over-the-air updates (C++), LTE modem firmware (C++), initial board flash-tool for ARM-based truck-automation product (bash). Upstream contributor to u-boot. Conversant with GDB, continuous integration tools (GoogleTest, Gerrit).

2012-2016: Automotive software engineer at Mentor Embedded Software Division

Linux kernel device driver creation for automotive projects based on Freescale i.MX6 platform. Related work on fastboot and systemd. Co-author of new GStreamer plug-in for customer image-processing IP core. On-site at customer location in Germany for 8 months.

2010-2011: Technical Consultant, Nokia Mobility Solutions

2009-2010: Software Engineer at Stanford Linear Accelerator Center, Menlo Park CA

Linux kernel and RTEMS device drivers and applications for Fieldbus sensors, power supplies and gigabit cameras.

1997–2009: Staff scientist at Hewlett-Packard Labs, Palo Alto CA

1992–1997: Staff physicist at Lawrence Livermore National Lab

1989–1992: National Research Council postdoctoral fellow at Naval Research Lab, Washington DC

20 years of designing and building automated test systems for advanced materials intended for printed electronics, magnetic and optical data storage and landmine detection.

Formal Education:

1983–1988: PhD in physics from **Massachusetts Institute of Technology (MIT)**.

1979–1983: BA in physics from **Dartmouth College**.

Professional: Presenter at linux.conf.au, Embedded Linux Conference, Southern California Linux Expo, Automotive Linux Summit, Maker Faire and many others. Eight issued US patents and over 30 refereed technical publications. Member, SAE and ACCU.

Personal: US citizen. German proficiency: Sprachdiplom Niveau B2. Exclusive Linux user at home and work since 1999. Cycling enthusiast.