

Contact

www.linkedin.com/in/vemundbakken (LinkedIn)
www.atmel.com (Company)

Top Skills

ZigBee
GSM
Wireless Sensor Networks

Languages

Python (Native or Bilingual)
Norwegian (Native or Bilingual)
English (Native or Bilingual)
C (Native or Bilingual)

Patents

Capacitive Force Sensor
Scaling Voltage for Data
Communication Between Active
Stylus and Touch-Sensor Device
Narrow-Band Touch Detection
Tuning Algorithm for Noise
Reduction in an Active Stylus
Autonomous Multi-Packet Transfer
for Universal Serial Bus

Vemund Bakken

CTO & Founder
Trondheim, Trøndelag, Norway

Summary

Accomplished and creative firmware engineer with a passion for all things embedded. Successful as a team member or when guiding others.

Career with excellent venues for developing unique firmware and hardware solutions based on a wide range of embedded controllers; ARM Cortex M0/3/4/7, AVR, AVR32 and custom DSPs and sequencers, also multicore systems.

#Idea to Finished Product Mentality: Confident in taking ideas or research into volume production. Keen in predicting issues, architecting structured solution to problem and selecting innovative technologies. Uses structured development flow using modelling (SDL/UML/Matlab and software models) and a top down approach.

#Design and implementation of ultra low power embedded systems. Throughout career, worked on energy constrained systems (Batteries and energy harvesting) and applied combination of firmware and hardware knowledge to conserve maximum energy.

#Capacitive Touch Interfaces. Highly experienced in all aspects of this technology; electrical principle and development of sensing schemes, filtering and noise mitigation, high level object tracking algorithms. Executed numerous research projects that led to vital IP such as active stylus digitizer. Proven track record through patents and volume products. Worked closely with IC design teams on chip architecture.

#Wireless Sensor Networks. Implemented various Bluetooth, ZigBee and RF4CE stacks with focus on low program and resource footprint. Used various WiFi and BT/LE chipsets. Taken numerous 2.4GHz products through compliance (FCC/ETSI) and conformance (Interop events) testing.

#Reusable and Scalable Code. Experienced using RTOS and software frameworks to ensure that firmware is malleable as requirements and features change. Compiler and hardware abstractions. Using thread/RTOS model as design principle.

#Programming Language Agnostic. Confident with a range of low to high level programming languages: Assembly language, C, Cpp, Java, Python and Matlab.

Experience

ONiO

CTO

August 2018 - Present (7 years 1 month)

Trondheim Area, Norway

ONiO® provides the personal, educational and professional markets with innovative medical technology solutions. The company is dedicated to making the best healthcare products by understanding the complexities of life and challenging the way we practice and record healthcare. ONiO is committed to creating products that improve our collective health.

Nordic Semiconductor ASA

4 years 2 months

Group Manager for System Architecture Group

September 2015 - August 2018 (3 years)

Manager of Nordic Semiconductor world class System Architecture Group.

Sr System Architect

July 2014 - September 2015 (1 year 3 months)

Passionate about ultra low power and wireless:

Extreme Low Power Bluetooth Smart Radio

Petitioner Shenzhen Qianfeng Intelligent Technology Co., Ltd.

Emerging IoT Wireless Technologies
High End ARM Cortex M platforms
Wireless protocol stacks

Atmel Corporation

4 years 4 months

Staff Firmware Engineer - Touch R&D

May 2012 - July 2014 (2 years 3 months)

San Jose

Design and development of Atmel's next generation touch algorithms and hardware.

#Active Stylus: Architected and implemented Atmel's very first active stylus to be used in conjunction with capacitive touch screens. End to end development including low power hardware design and embedded algorithms. Evaluation of technologies associated with project; pressure sensing, motion sensing, communication through various radio links. Used today in volume production.

#Incell: Firmware architecture and research for a new human interface principle based on the touch sensor being laminated into the LCD stack up.

#Algorithm Development: Designed various filter and DSP algorithm implementations for ARM CortexM0/3/4, AVR32 and various purpose built accelerators/sequencers. C and assembly language used.

Staff Engineer

April 2011 - May 2012 (1 year 2 months)

Responsibilities within:

- Capacitive Touch Technologies: Focus on key customers and design in. Protocol and algorithm development. Touch sensor design and tuning.

- Microcontroller: Customer design in on all Atmel microcontroller platforms; AVR, AVR32 and ARM. Training responsibilities as well as peripheral design.

- Wireless: Stack development for RF4CE and ZigBee systems. ETSI and FCC testing as well as stack compliance.

Senior Applications Engineer

April 2010 - April 2011 (1 year 1 month)

Customer design in and support for the Americas:

- AVR, AVR32 and wireless products
- system architecture
- maXTouch code and test development
- embedded code development and optimization
- mobile platforms: GSM, WiMAX, RF4CE, ZigBee, Bluetooth
- distributed security

Atmel Norway

Applications Engineer

September 2004 - June 2010 (5 years 10 months)

Programming and system solutions for embedded platforms. Mainly work on AVR and Xmega, but also AVR32 and ARM7.

Norwegian Armed Forces

Weapon's Instructor

August 1999 - May 2001 (1 year 10 months)

Education

Norwegian University of Science and Technology (NTNU)

M.Sc., Engineering Cybernetics · (2001 - 2006)