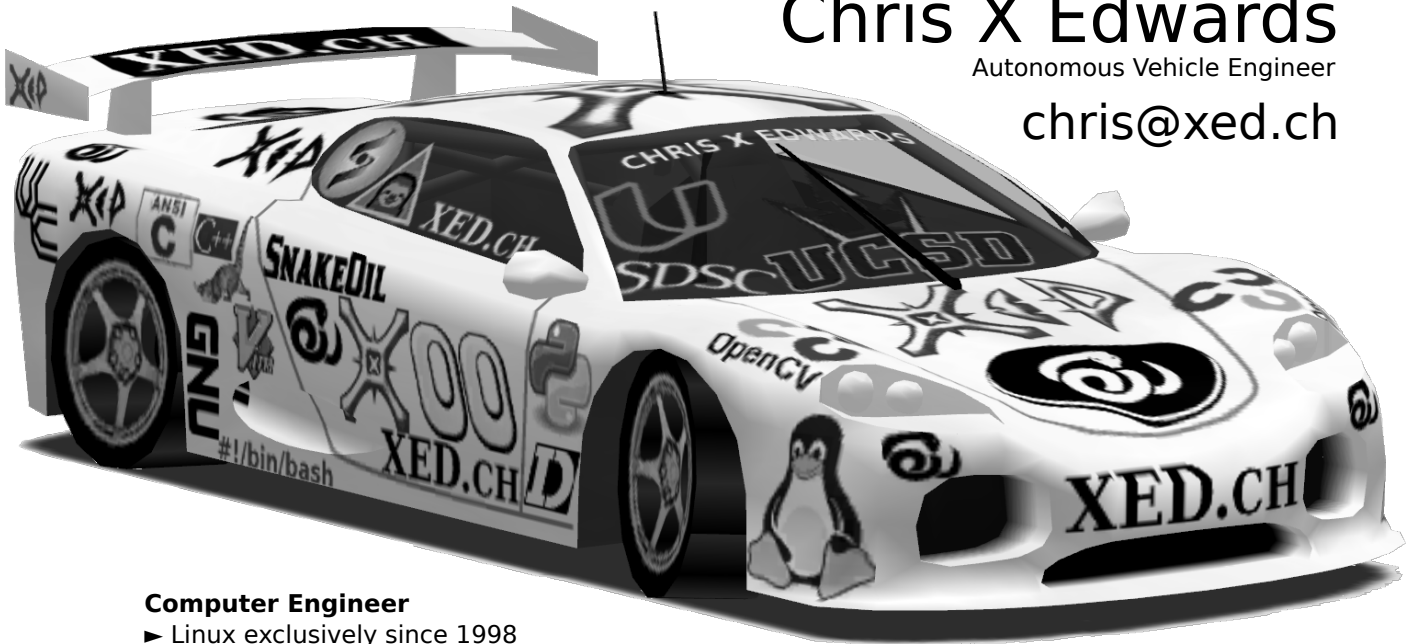


# Chris X Edwards

Autonomous Vehicle Engineer

chris@xed.ch



## Computer Engineer

- ▶ Linux exclusively since 1998
- ▶ Python expert (2 & 3)
- ▶ Bash virtuoso
- ▶ C/C++ veteran
- ▶ Security pro
- ▶ Data management pro
- ▶ Cluster management pro
- ▶ Private cloud artisan since 2006
- ▶ Created my own...
  - ▷ RPN Lisp, used daily since 2005
  - ▷ Rendering engine in C++
  - ▷ Job scheduler in Bash
  - ▷ Improved syntax/parser for C
  - ▷ Iridium satellite message library
  - ▷ CPU Benchmark with BPP  $\pi$  digits

## Autonomous Vehicle Zealot

- ▶ Udacity Self-Driving Car Nanodegree
  - ▷ 2017 - Graduated with first cohort
  - ▷ Finalist - Bosch Path Planning Challenge
- ▶ Simulated Car Racing Competition
  - ▷ 2015 - 3rd
  - ▷ 2013 - 4th
  - ▷ SnakeOil Python interface for SCR
- ▶ Built a programmable 1/70 scale car
- ▶ OpenCV, camera processing
- ▶ Machine learning
  - ▷ TensorFlow, Keras
  - ▷ CNN image analysis, object detection
  - ▷ Genetic algorithms
- ▶ ROS, system integration
- ▶ Functional Safety, ISO26262
- ▶ Committed to advancing AV technology

## Extraordinary Colleagues

- ▶ UCSD (12 years, current employer)
  - ▷ San Diego Supercomputer Center
  - ▷ Systems & Networking CSE
  - ▷ School of Pharmacy
  - ▷ Scripps Institution of Oceanography
- ▶ Molsoft LLC (2 years)
- ▶ Dynamic Industries (7 years)

## Real Engineer

- ▶ BSci Industrial Engineering
- ▶ Manufacturing Pro
- ▶ Operations research
- ▶ Logistics, planning
- ▶ Simulation analysis
- ▶ Metrology, calibration
- ▶ Mechanical design
- ▶ 3d modeling, drafting
- ▶ Statistics
- ▶ Engineering physics
- ▶ Linear algebra
- ▶ Control theory, sensor fusion

## Real World

- ▶ Expert machinist, file to 5-axis CNC
- ▶ Skilled auto mechanic
- ▶ Low wattage computer builds, repair
- ▶ Electronics repair, soldering/welding
- ▶ Bicycled over 250,000km, I know...
  - ▷ Road surfaces, signage, street furniture
  - ▷ Weather, drainage, terrain, hazards
  - ▷ Driver behavior and psychology
  - ▷ Cyclist, pedestrian, and VRU concerns
- ▶ Superlative communication
  - ▷ Public speaking
  - ▷ Accurate documentation, reports
  - ▷ Sensible comments, variable names
  - ▷ Art, graphics, visualization
- ▶ English, German, Spanish

## More Information

- ▶ My website - <http://xed.ch>
- ▶ Resume - [xed.ch/resume](http://xed.ch/resume)
- ▶ Technical notes - [xed.ch/help](http://xed.ch/help)
- ▶ Blog - [xed.ch/blog](http://xed.ch/blog)
- ▶ AV resources - [xed.ch/av](http://xed.ch/av)
- ▶ Projects - [xed.ch/project](http://xed.ch/project)