Aravinth

1 Personal Data

Full Name:	Sivalingam Panchadcharam Aravinth
Place and Date of Birth:	Sri Lanka | 06 May 1987
Address:	Bornstr. 3, 12163 Berlin, Germany
Phone:	+49 176 31173663
email:	me@aravinth.info
cv updated on:	5th June 2017

2 Work Experience

Current – Apr 2016 | Lead Electronics + Embedded Systems Engineer
SENIC GmbH, Bangalore

Prototyping, developing and manufacturing of NUIMO Smart Home Smarter Controller, Smart Home Gateway, Smart Appliances using Bluetooth LE, ARM Cortex-M0, Allwinner H3, NRF51422, Embedded C, GCC, Keil uVision, JTAG, Segger JLink Debugger, PCB design, KiCAD, Optical Encoder, Capacitive touch sensor, Infrared Gesture Recognition, Python, Embedded Linux, Yocto, Mainline Kernel, u-boot bootloader, Over-The-Air update

Mar 2016 – Oct 2015 | Head of Engineering (Electronics & Full Stack)
Macsxperts, Bangalore

Research and development of Hydroponics/Aeroponics Vertical farming system for urban and commercial cultivation using *pH & Electrical Conductivity sensors, Temperature & Humidity sensors, Liquid level sensors, Irrigation and Nutrient management controllers, Peristaltic dosing pumps, Solenoid valves, Misting Pumps, Servo Motors, Industrial Automation standards, Electronics circuit design, AVR Atmega 2560 Microcontroller, C++, Internet of Things, Raspberry Pi, NodeJS, AngularJS*

Sep 2015 – Aug 2015 | Embedded System Engineer
SmartB Energy Management GmBH, Berlin

Development of Embedded systems for Non-Intrusive Energy Monitoring System for Smart Buildings using *NILM Machine Learning, OMAP Processor, MityDSP, PLC Gateways, ARM Cortex, Linux Kernel development, C, Shell Script, Python*

Jun 2015 – May 2015 | Electronics Engineer
Vivid Light Festival, Sydney

Research and development of an Electronic Art Installation using *300 meters of LED Neon Flex, LED Drivers of 2K Watts Power supply, Arduino, BCI Pulse Oximeter and Heartbeat Sensor, Power MOSFET STP16NF06L*

May 2015 – Oct 2014 | Senior Software Engineer (Full Stack)
The Jodel Venture GmbH, Berlin

Development of Backend and Frontend web application, DevOperation, Data Analysis using *Javascript, NodeJS, MongoDB, Redis Cache, Mongo Cluster, ReactJS, Bootsrap, HTML, CSS, Amazon AWS, Ansible, ElasticSearch, Logstash, Kibana, New Relic*

Sep 2014 – Jan 2013 | Embedded System Engineer (Electronics & Full Stack)
Yetu AG, Berlin

Development of Cloud infrastructure and SmartHome Gateway hardware for Internet of Things using *Z-Wave, OpenHAB, Smart Sensors, Freescale SBC, ARM, RaspberryPi, Smart Metering, Device Recognition Machine Learning Algorithm, Javascript, NodeJS, BackboneJS, MochaJS, Java*

Jul 2011 – Apr 2011 | Senior Software Engineer
Infosys Ltd, Mysore
Development of Vesels & Tanks management software, Data Analysis for British Petroleum - Alaska using *C#, .Net, WPF, Silverlight, Microsoft SQL, Sharepoint, Windows IIS, Visual Studio*

Mar 2011 – Nov 2009 | Software Engineer
Academia Grandiosa Medicinae, New Delhi
Development of Interactive E-Learning application using *C#, C++, ASP.Net, MS SQL, HTML, CSS, Javascript, Windows IIS, Visual Studio*

Oct 2009 – Oct 2008 | Software Engineer
Tata Consultancy Services, Hyderabad, New Delhi
Development of Call Data Records System for BSNL Telecom using *C#, C++, ASP.Net, Windows IIS, Visual Studio*

2008 – 2003 | Animator, Graphics and Web Designer
Freelance
Creation of Interactive Portfolios, Websites, Educational Animations, Logos, Banners, Posters using *Adobe Photoshop, Adobe Illustrator, Flash, 3D Studio Max, Adobe AfterFx, Sound Forge, Dreamviewer, HTML, CSS*

3 Education

2015 | Master of Science in Electrical Engineering, **Technical University of Berlin**
Courses : Electromagnetic Field Theory, Electronics, Communication Networks and Technologies, Artificial Intelligence, Robotics, Machine Learning, Vehicle-To-Vehicle Communication for Autonomous Vehicle, Embedded Systems, Biometric Identification, Computer Security.
Thesis : Gesture Recognition for Human-Robot Interaction: An approach based on skeletal points tracking using depth camera

2008 | Bachelor of Technology in Electronics and Communication Engineering, **SRM University**, Chennai, India
Courses : Electronics, Analog & Digital Communication Technologies, Microcontrollers, Electrical Networks, Circuit Theory, Electromagnetic Field Theory, Signal Processing, Image Processing, Integrated Circuits, Control Systems, VLSI, Embedded Systems
Thesis : GSM Cell Phone controlled Two Axes Robot with artificial intelligence for the detection of Fire, Temperature and Metal

2003 | Associate Degree in Multimedia (Graphics, Animation and Web design), **ARENA Multimedia**, Chennai, India
Courses : Graphic design, Web design, Illustration, Animation, Sound & Video Editing using *Photoshop, HTML, CSS, Dreamviewer, illustrator, Flash, 3ds Max, Sound Forge, After FX*

4 Projects

List of freelancing projects for private clients, academic research projects, new media art projects, Hackathon challenge and personal projects.

2016 | **Swan Lake Music Art**, *Private, Berlin, Germany*
Swan Lake Music Art is a project of electronics and firmware to provide monotonic music for a multilayer painting about Russian Ballet which is painted by a fine artist who has been working on the project to exhibit the beauty of Ballet dance. Since the painting is on thinner canvas, the form factor of electronic should be thinner and smaller.
Technology: Tchaikovsky SwanLake Music, Attiny85, Monotone, AVR, Kicad, Arduino ISP, Piezo, Musescore, Midi, PWM, 440Hz

Link | https://github.com/AravinthPanch/swan-lake-music-art

2015 | **Gesture Recognition for Human-Robot Interaction: An approach based on skeletal points tracking using depth camera**, *Master Thesis, Distributed Artificial Intelligence Lab, Berlin, Germany*

Gesture Recognition For Human-Robot Interaction with modelling, training, analysing and recognising gestures based on computer vision and machine learning techniques.

Technology: HRI, Aldebaran NAO, Humanoid Robot, Depth Camera, AsusXtion, OpenNI2, NiTE2, Boost, UDP, WebSocket, ThreeJS, Matlab, C++, Javascript, Python, Gesture Recognition Toolkit, Adaptive Naive Bayes Classifier, Machine Learning, Robotics, 3D printing

Link | https://github.com/AravinthPanch/gesture-recognition-for-human-robot-interaction

2015 | **Heart of The City**, *New Media Art Installation for VIVID Light Festival 2015, Sydney, Australia*

The Heart of the City is an interactive public art sculpture that pulses light according to the heart beat of the people. The sculpture invites several people to sit and interactive with it.

Technology: Heartbeat sensing, Pulse Oximeter, Arduino, LED Neon Flex, Circuit Design, Power MOSFET STP16NF06L

Link | http://www.anaisafranco.com/heartofthecity, https://github.com/AravinthPanch/heart-of-the-city

2014 | **Smart Green House**, *Research, Telecommunication Networks Group, TU Berlin, Germany*

Smart Green House is a scalable plant monitoring system that helps us to monitor our plants and water them automatically.

Technology: IEEE.802.15.4, WaspMote, XBee, Light Sensor TSL2561, Moisture Sensor Temperature-Humidity Sensor DHT11, NodeJS

Link | https://github.com/AravinthPanch/smart-green-house

2013 | **RSSI based Indoor localization and Raw Ranging Data Visualization**, *Research, Telecommunication Networks Group, TU Berlin, Germany*

Indoor localisation using RSSI. RSSI is received signal strength indicator in IEEE 802.11 beacon packet and beacon packets are transmitted periodically to announce the presence of WiFi.

Technology: IEEE.802.11, Beacon Packet, RSSI, NodeJS, D3JS, Matlab, TWIST Testbed, Signal Jammer, WiSpy Spectrum Analyzer, Turtlebot, ROS, Javascript, Python

Link | https://github.com/AravinthPanch/rssi

2008 | **GSM Cell Phone controlled Two Axes Robot with artificial intelligence for the detection of Fire, Temperature and Metal**, *Bachelor Thesis, SRM University, Chennai, India*

The objective is to control a Robot over a long terrestrial distance by using GSM Network instead of using other communication technologies which have shorter range.

Technology: Two axis Robot, GSM cell phones with DTMF, DTMF receiver – UM92870, Sensors to detect temperature, fire and metal (IR LED, LDR, NTC), Micro Controller – 89c51, Buzzer

2014 | **Stereo Acoustic Light Emitter**, *Hackathon Challenge, Science Hackday Berlin 2014*, **Best Data Hack Award**

It is an audio-visual system that makes use of spectral Tube and sensors to create a feedback system.

Technology: spectral tube, OSC, MIDI synthesizer, Arduino, proximity sensor, infrared sensor, touch sensor, microphone, circuit board

Link | https://github.com/AravinthPanch/stereo-acoustic-light-emitter

2014 | **Confusion**, *New Media Art Installation, Creative Code Jam, Berlin, Germany*

Confusion is an emotional sculpture in the form of a head with two faces that talks with the spectator when someone touches it.

Technology: Acrylic, Laser cutting, Plasma ball with Tesla coil, Current sensor, Arduino, MP3 shield, speakers

Link | https://github.com/AravinthPanch/confusion-sensitive-sculpture, http://www.anaisafranco.com/confusion

2014 | **Home DNS**, *Personal, Internet of Things*
Home DNS is simple tool that will allow us to access our home LAN over internet.
Technology: NodeJS, RaspberryPi, Cloud, Port forwarding
Link | https://github.com/AravinthPanch/home-dns

2014 | **Yetu CAM**, *Research, Yetu AG, Berlin, Germany*
Yetu CAM is a simple telepresence robot. A telepresence robot is a remote-controlled, wheeled device with a display to enable video chat and videoconferencing, among other purposes.
Technology: Arduino Yun, 360 deg Servo Motor, MDF Laser Cut
Link | https://github.com/AravinthPanch/yetu-cam

2013 | **StreeMuFi**, *Hackathon Challenge, Hack4Good, Berlin, Germany*, **Winner**
Street Music Finder (StreeMuFi) is a project to help street musicians earn a living with their music. Here you can search for street musicians and ask them to play a gig at your event.
Technology: PHP, Android, NodeJS, MySQL, GeekList
Link | https://github.com/AravinthPanch/streemufi

2013 | **Autonomous Vehicle**, *Research, Daimler Center for Automotive Information Technology Innovations (DCAITI), Berlin, Germany*
Vehicle-to-Vehicle Communication for autonomous vehicle to support Cooperative Adaptive Cruise Control (CACC) and Media Prefetching.
Technology: Java, VSimRTI Simulation, Mercedes Benz, v2v, v2x

2014 | **Academics-LMU**, *Freelance, Liaoning Medical University, Liaoning, China*
E-Learning web application for medical students to attend various test series.
Technology: Wordpress, WPLMS, PHP, My SQL
Link | http://academics-lmu.com

2013 | **Shanti CRM**, *Freelance, Bevermann Telesalesfactory, Berlin, Germany*
Customized CRM based on Microsoft Dynamics CRM to manage marketing campagne.
Technology: Microsoft Dynamics CRM, SIP, Visual Studio, WPF, MVVM, Javascript

2007 | **Steganography**, *Freelance, SRM University, Chennai, India*
Steganography is the art or practice of concealing a file, message, image, or video within another file, message, image, or video.
Technology: Visual Basic, Image Processing, RGB
Link | https://github.com/AravinthPanch/steganography

2003 | **Interactive Anatomy**, *Freelance, Moscow Medical Academy, Moscow, Russia*
Interactive application for medical students to learn anatomy of human body.
Technology: Flash, Sound Forge, Photoshop

5 Certifications and Test Scores

2009 | CCNA - Cisco Certified Networking Administration
2010 | EC-Council - Ethical Hacking
2010 | IELTS - International English Language Testing System. *Score: 7.5/9*
2012 | TestDAF - Test of German as Foreign Language. *Score: 16/20*

6 Award

2011	Erasmus Mundus Scholarship for outstanding students from Third-Countries to pursue higher education in Europe

7 Languages

Tamil:	Native proficiency
English:	Bilingual proficiency
German:	Full professional proficiency
Hindi & Urdu & Malayalam:	Limited working proficiency
Russian:	Elementary proficiency

8 Skills

Programming languages:	C, C++, C#, Java, Javascript, Python, MATLAB, Unix Shell Script
Frameworks/Library:	.Net, WPF, Silverlight, Boost, NodeJS, BackboneJS, ReactJS, MochaJS, CSS, HTML, WebGL, Arduino, Processing, OpenCV
Database/Cache:	MS SQL, My SQL, Postgres, MongoDB, Redis Cache
IDE:	Vim, Visual Studio, Xcode, Eclipse, uVision, WebStorm, PyCharm
OS:	Embedded Linux, Linux, Android, OSX, Windows
Communication Protocol:	Z-Wave, ZigBee, IEEE 802.15.4, I2C, SPI, Bluetooth, DALI, KNX, CAN
DevOp :	Ansible, Chef, ElasticSearch, Logstash, Kibana
Robotics:	AI, Machine Learning, Computer Vision, ROS, Aldebaran NAO
Electronics:	Semiconductors, Microcontrollers, Circuit Design, PCB design, PCB Etching, Digital and Analog sensors, Automation & Control Systems, Signal Processing
Fabrication:	3D printing, Sheet Metal fabrication, Laser Cutting, Welding, CNC Milling, Vinyl Cutting, Plotting
Media:	2D Animation, Flash, Photoshop, Illustrator, 3D modeling, Fusion 360, Sketch Up

9 Interests and Activities

Research & Development, Open Source, Programming, Electronics, Robotics, Artificial Intelligence, Bionics, UAV, Machine Learning, Statistics, Data Visualization, Algorithms, Computer Vision, Image Processing, Internet Of Things, Wireless Technologies, Deep Security, Computer Networks, Physics, Mathematics, Quantum Mechanics, Creative Coding, Art, Painting, Graphic Design, Animation, 3D, Archery, Martial Arts, Agriculture, Sustainability, Languages, History, Making & Fabrication,

10 Contribution

Mentor	SINGA Deutschland Volunteering to help qualified Refugees to get a place in German Job market by mentoring on Technical and Soft skills.

Link	http://singa-deutschland.com

Founding member | Sustainability Drinks Berlin

It is a series of regular get-together to promote an active sustainability movement in Berlin to create an awareness about the environment, energey conservation, health and hygiene.

Link | http://sustainabilitydrinks.de

Organizing Team | Science Hackday Berlin

Science Hackday brings together designers, developers, scientists and other geeks in the same physical space for a brief but intense period of collaboration, hacking, and building 'cool stuff'.

Link | http://berlin.sciencehackday.org

Team Member | DAInamite Humanoid Robot Team, Robocup Standard Platform League

RoboCup is an international scientific initiative with the goal to advance the state of the art of intelligent robots.

Link | http://www.dainamite.de

Cover Letter

In the year 1987, Aravinth was born in a beautiful coastal town in Sri Lanka. He was introduced to computer in 1992 by his father who is an Electrical Engineer and Architect. However, his interests in digital technologies pushed him to transform his artistic skills and gained a Diploma in Graphics and Animation while he was a teenager. Then he worked on Interactive Portfolios, Graphic Designs, Illustrations and Animations for various clients as a freelancer.

In the year 2004, he progressed to pursue Bachelor's Degree in Electronics and Communication Engineering, where he learned about Electronics, Analog and Digital Communication Technologies, Microcontrollers, Embedded Programming, Digital Signal Processing and Robotics. As a result, he built a Robot that can be controlled with GSM from anywhere in the world.

In the year 2011, he moved to Berlin to pursue Master's Degree in Electrical Engineering, where he has worked on various research projects of Deutsche Telekom T-Labs, Daimler Center for Automotive Information Technology Innovations (DCAITI), Distributed Artificial Intelligence Laboratory (DAI Labor) and Telecommunication Networks (TKN) Group. He gained greater knowledge of research methodologies from the projects in the field of Autonomous Vehicle, Vehicle-To-Vehicle Communication, Biometrics, Internet Of Things and Wireless Mesh Networks, Robotics, Computer Vision, Artificial Intelligence and Machine Learning.

Furthermore, he has been contributing to an association called Sustainability Drinks Berlin, which organizes regular get-together to promote an active sustainability movement in Berlin and Dainamite Robocup Team, which is a humanoid robot research group of DAI Labor.

Apart from that, he has been working with many corporations and startups as an Engineer to build anything from Enterprise Software to Embedded Hardware Systems. As a freelancer, he is been working on various Electronics, Software and Robotics projects for Private Clients, Academic Research, New Media Art Exhibitions and Hackathons.

His ambitions and interests are to work in creative innovation projects in the fields of Robotics, Automotive, Aviation, Automation, Media Art and Data science where he would play a role from the research till the fabrication of concept.