

A.N. Shyam Sundar

<https://anshyamsundar.github.io/PersonalWebsite/>

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EDUCATION:

University of London, London, UK
Bachelor of Laws

Expected Dec 2025

Clemson University, Clemson, SC
Master of Science in Electrical Engineering
Minor: Computer Science

May 2011
GPA: 4.00/4.00

National Institute of Technology, Tiruchirappalli, India
Bachelor of Technology in Electronics and Communication Engineering

June 2009
GPA: 8.26/10.00

RELATED EXPERIENCE:

Software Engineer, DCG Systems/Thermo Fisher Scientific

Jul 2012-Present

- **Principal Developer and Maintainer** of Nanoprober and AFM product lines
- Train manufacturing teams and oversee all production systems' software
- Spearhead development of Image Processing/Vision Algorithms
- Software security, licensing, contracts and legal review/compliance
- Hardware interfacing via APIs and protocols
- Develop utilities to aid tool configuration, management and enhancements
- Troubleshooting, customer escalations and field support

Electrical Controls and Software Engineer, Qualitek-VIB

Aug 2011-Jul 2012

- **Lead Applications Engineer** for core product lines – QCS and PCS
- **Principal Developer**, new product line – ProTrace Plant Process Monitoring
- Allen-Bradley, Modicon PLC programming, troubleshooting and support

Independent Software Developer, Trachte Inc.

Feb-Jul 2012

- Developed a software tool for auto-data migration between databases

Graduate Assistant, Analysis of Linear Systems

Aug 2010-May 2011

- Grading weekly assignments and maintenance of class grade database
- Preparing fresh course materials and typesetting current course handouts

Summer Intern, Robotics and Virtual Reality, Hungarian Academy of Sciences

Jun-Aug 2010

- Developed a python wrapper for serial interfacing a general mobile robot
- Got acquainted with VIRCA, an online robot virtual collaboration tool

Summer Intern, Robotics, Indian Institute of Science, Bangalore

May-Jun 2008

- SD card interfacing using microcontroller C8051F12X
- Developed UART protocols for PC-microcontroller communication

Winter Intern, Computer Hardware and Networking, Air India

Dec 2007

- Training in operating systems, computer hardware and internet protocols
- Hands on experience in assembling desktop CPUs and Epson printers

ENGINEERING PROJECTS:

- | | |
|---|-------------------|
| • Freeze Switch and Load Testing modules for Nanoprober 5 | Jan 2025-Nov 2025 |
| • Security and penetration testing for Nanoprober 5 qualification | Jun 2025-Nov 2025 |
| • Probe motion and path-planning algorithm | Jan 2025-Jun 2025 |
| • Hyperion Atomic Force Microscope platform migration | Jan 2024-Dec 2024 |
| • Nanoprober platform migration | Jan 2022-Dec 2023 |
| • Automated probe landing | Jan 2020-Dec 2021 |
| • EBIRCH module to enable EBAC/EBIC imaging | Jan 2019-Dec 2019 |

• Nanoprober LR and HP product line development	Jan 2017-Dec 2018
• Reverse engineering Atomic Force Microscope	Jan 2016-Dec 2016
• Automated Cross Cleaning	Jun 2014-Jan 2016
• DCM Module charting and enhancements	Sep 2013-Dec 2014
• Probe tip detection and auto-focus/wobble/stigmation algorithm	Dec 2012-Jun 2014
• PLL-based force feedback module	Jul 2012-Oct 2012
• ProTrace Plant Process Monitoring Software	Dec 2011-Jun 2012
• Development of a Vision-based corrugated sheet counter	Jan 2012
• Algorithm development for sheet warp detection using laser sensors	Dec 2011
• Zigbee interfacing using Arduino Duemilanove development board	May 2011-July 2011
• Graduate Thesis: Pose estimation and robotic disassembly	Jan 2010-Apr 2011
• Development of a Universal Robotic Gripper	Dec 2010-Mar 2011
• Development of an Email Client for Smart-phones	May 2010
• Development of a Bluetooth-based Device tracking system	May 2010
• Control of Mobile Robot using Hand-Gestures	Mar-Apr 2010
• Modeled forces on a general Haptic Interface Device	Dec 2009
• Enhancement of NASA's Moon Landing Videos	Nov-Dec 2009
• Designed a Pong game to be adapted as a GUI for a game-playing robot	Sept-Oct 2009
• Development of an Amphibious Robotic Vehicle	Jan-Mar 2009
• Design of high-voltage DC-pulse generator	Jan 2009
• Design and Development of Filters using CPW Antennas	Nov 2008
• Design and Development of a Bio-Implantable Antenna	Aug 2008
• Development of a Microwave Components tutorial software	Jan-Feb 2008
• Designed and Implemented a purely hardware-based Line-Follower Robot	Jan-Mar 2007
• Development of Attenuating Circuit Design software	Sep-Oct 2006

LEGAL WORK:

• Public impact litigation and advocacy, Bhavsar v Const LLC	May 2023-Present
• Public impact litigation and advocacy, Re Prime Core Technologies, et al	Aug 2023-Present
• Assist Pro Se litigants in family court, bankruptcy and civil litigation	Aug 2018-Present
• Public impact litigation and advocacy, Re BlockFi Inc., et al	Nov 2022-Jan 2023
• Public impact litigation, Collin County Commissioners Court	Oct 2017-Dec 2017
• Texas Small Claims Court filings and arguments	Dec 2013-Dec 2015

SOFTWARE SKILL SET:

Languages:

C#, C, C++, Python, Java, Visual Basic, Perl, LISP, SQL, HTML, PHP, Javascript, Ajax, Windows scripting, Verilog, Assembly languages of microprocessor 8086, microcontrollers 8051, 6811, 6812 and the ARM Processor.

Packages, Frameworks and Libraries:

Visual Studio, Dot Net, ASP.NET, gRPC, LightningChart, NI Measurement Studio, Syncfusion Essential Studio, RSLogix 500 and 5000, RSLinx, Aria, AutoCAD, jQuery, Matlab, Octave, Blepo, OpenCV, EmguCV, OpenGL, PyBlueZ, PySerial, Xlrd/Xlwt, Notepad++/Regex, LaTeX, MathType, Magick++, CommSim 7, Photonics CAD, Proteus ISIS, Code Composer Studio, Keil, Adobe Photoshop, GIMP, Inkscape, Quartus, VIRCA, Oracle, NetBeans, VMWare ESXi, TortoiseSVN and Git.

Operating Systems:

Windows, Linux (Ubuntu, CentOS), UNIX and Android.

Certifications:

Certified ScrumMaster, Heartsaver First Aid CPR AED.

LEGAL SKILL SET:

Legal strategy, research, drafting, filing, litigation, contract review and negotiation.

PATENTS, PUBLICATIONS AND RESEARCH:

- Capacitance-based detection of probe contact, **Shyam Sundar Aswadha Narayanan** (US Patent application US-20240385238-A1)
- “SEM Vision Based Realtime Nanoprober Autofocusing Algorithm” – **Shyam Sundar**, Sushil Digewade
- “Pose Estimation for Robotic Disassembly using RANSAC with Line Features” – **Shyam Sundar**, Dr. Richard Groff
- “Household Floor Decluttering Using a Mobile Universal Gripper” - Bryan Willimon, Brian Peasley, **Shyam Sundar**, Steven Hickson, Dr. Stan Birchfield
- “CPW Structures and Discontinuities” – **Aswadha Narayanan Shyam Sundar**, Dr. S. Raghavan, Mr. D. Sriram Kumar (International Conference, ICOICT 2009)
- “Implantable Antennas” – **Aswadha Narayanan Shyam Sundar**, Dr. S.Raghavan, Mr. D. Sriram Kumar (International Conference, ICOICT 2009)

ACHIEVEMENTS AND AFFILIATIONS:

- Peer Recognition Awards, Thermo Fisher Scientific, 2021, 2022, 2024, 2025
- Outstanding Employee Award, DCG Systems, 2015
- Bravo Award, DCG Systems, 2013, 2014 and 2015
- Won Gulf Association of Indian Professionals Medal and a Certificate from the Ambassador of India
- First place in United Nations Examination conducted by the U.N, Gulf
- Second place in “Ingrained”, a national level Microcontroller-based Circuit design competition in India
- Third place in “Sanrachana”, a national level Roller-Coaster mechanism design competition in India
- Member, Alpha Epsilon Lambda Honor Society, Clemson University Chapter
- Member, Omicron Delta Kappa Honor Society, Clemson University Chapter
- Member, Robotics Society of America
- Member, Australian Robotics and Automation Association
- Member, Institute of Electrical and Electronics Engineers
- Member, ScrumAlliance

LEADERSHIP:

- Campus Representative, CollegeBookRenter, Clemson University
- Graduate Student Mentor, Clemson University
- Event Coordinator, MuAnaDigix, Circuit designing competition, NIT Tiruchirappalli
- Team Leader, National Service Scheme (NSS) Camp, NIT Tiruchirappalli
- Coordinator, “Lapis Cup”, Cricketing event of Wisdom Club, NIT Tiruchirappalli
- Manager, Tour De NITT, annual cycling event, NIT Tiruchirappalli
- Associate Coordinator, Festember '07, Cultural Festival, NIT Tiruchirappalli

ACTIVITIES:

- Member, Thermo Fisher Scientific Environmental Health and Safety Committee
- Member, OSUM Club, Clemson University
- Student Patrol Officer, Clemson University Police Department
- Member, Wisdom Club, NIT Tiruchirappalli
- Member, Computer Support Group for Pragyan '07, Technical Festival, NIT Tiruchirappalli
- Member, Organization Committee of Nittfest '06, Cultural Festival, NIT Tiruchirappalli
- Member, Technical Team of Probe '06,'07 and '08, Technical Symposium, NIT Tiruchirappalli