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Kunal Dawn

Tokyo

ACADEMIC QUALIFICATIONS

Examination	Year	Board/University	CGPA
M.Tech. CSE	2013	SRM University	9.65 (3rd Rank)
B.Tech. CSE	2011	Sikkim Manipal Institute of Technology	7.45

TECHNICAL SKILLS

Operating Systems : Android, Linux (Expert), Windows
Languages : Java (Expert), C, C++, Python (Expert), C#, Matlab Script, Shell Script, Golang
RDBMS : MySql, Sqlite, H2
Web : AngularJS, Play Framework, Flask
Tools : Android SDK, Android NDK, Intel OpenCV, Aforge.NET, Qt SDK, JavaFX8, .NET3.5, GTK+, Git, Jenkins, Gradle, Gerit.
IDE : Eclipse, PyCharm/IntelliJ, Visual Studio.

WORK EXPERIENCE

SRM Technologies **Technical Consultant** **Jun 2013 - present**

Android Automation Tool

Maintenance of existing Android Proprietary UI Automation framework with native framework modeling and enhancement. Development of new Proprietary UI Automation framework for Android L/M. This project deals with maintenance, enhancement and development of android UI automation framework to execute superior automated UI testing and System testing remotely on proprietary android devices with custom Android OS.

- **Role** : Engineer and Architect
- **Environment** : Proprietary Android SDK, Proprietary UI Automation framework, Eclipse, Jenkins, Gerrit, Android Acceptance Test and Instrumentation.
- **Languages** : Java, Bash, Python and Jenkins build scripts, Gradle scripts.

Shared Information Infrastructure Software

The project aims in Development of Software/Protocol Stack which is combination of Pub-Sub and DTN concepts. It includes development of Software Front End and Core Protocol Stack for both Linux and Android operating system. The primary goal of the software is to increase the communication gap between Students and Teachers by providing a Network Infrastructure Independent way to share Information and News.

- **Role** : Lead Developer and Architect
- **Environment** : JavaFX SDK, Android NDK, Android SDK

INTERNSHIPS/PART TIME WORK EXPERIENCE

NEC, Cloud Systems Research Lab, JAPAN **Jul 2012 - Sep 2012**

- Investigation of Ferry Assisted Delay/Disruption Network System and its Simulation Models.

ACADEMIC PROJECTS

Liquid Interface Control using Hand Gesture

Development of Algorithms for Human Computer Interaction on Liquid Surface Interfaces. The project aims development of software which applies image processing techniques to convert any 2D Surface to a touch based input devices by only using Camera.

- **Environment** : Matlab
- **Role** : Programmer, Algorithm Designer

Surface Computing 4G HCI	Development Low Cost Hardware and Software for 4th Generation Human Computer Interaction. The project involves development of complete Software Stack with development two different Multi-Touch hardware based on Frustrated Total Internal Reflection and Diffused Illumination in Infrared Spectrum. The project also involves in development of unified and optimized image processing algorithms to process Infrared Spectrum at realtime and provide Multi-Touch inputs to Windows 7 Kernel via HID interface. ▪ **Environment** : Visual C#, Aforge.NET, EmugCV ▪ **Role** : Programmer, Algorithm Designer, Hardware Developer
Investigation of Graphical Authentication Techniques	Research and Development of Algorithms for Graphical Authentication techniques for which graphical passwords can only be remembered easily but cannot be written down or passed to other human for fraud. Primary objective of the project is to replace CAPTCHA by combining Multiphase Authentication and Human Detection Techniques. ▪ **Environment** : Matlab ▪ **Role** : Programmer, Algorithm Designer
DTN System for Rural Educational Systems	The project aims in development of Low Cost Hardware Software Stack which will allow Free and Autonomous distribution of Educational Materials from Urban Universities to Village Schools using Local Bus Transportation System. The project also aims in development of new Lightweight DTN Protocol for ARM Hardware and Mathematical Model development and Simulation to analysis the content delivery process. ▪ **Environment** : NASA ION DTN, DTN2 NumPy, SciPy, GNU Plot, ONE Simulator ▪ **Role** : Programmer, Algorithm Designer, Protocol Developer

SELECT PUBLICATIONS

Paper # 1	▪ **Analysis of cooperation of node movement and its effects on messaging delay in DTN systems.** IEICE-NS2012-138 [(Vol. 112, No. 350), Pages: 127-132, Dec. 2012]. H. Wakayama, K. Dawn, M. Ogawa
Paper # 2	▪ **A Novel Gesture Based Graphical Authentication Using Bounding Box and Corner Detection Algorithm.** International Journal of Communication & Signal Processing / IEEE Explore. (ICCSP 2012 Associated with IEEE). Kunal Dawn, G. Niranjana
Paper # 3	▪ **Graphical Authentication Using Region Based Graphical Password.** IOAJ International Journal of Computer Science & Information Technology, (ICCSIT 2012 COIMBATORE). Kunal Dawn, G. Niranjana
Paper # 4	▪ **A Cryptosystem based on Elliptic Curve Cryptography.** International Journal of Computer Science and Information Technology. (Vol.3 No.1 Jan-June 2010). Kunal Dawn, Medha Devaraj, Deepika Singh & Surabhi Sonam
Paper # 5	▪ **Liquid Interface Control using Hand Gesture.** International Journal of Computer Science and Information Technology. (Vol.3 No.1 Jan-June 2010). Kunal Dawn, Medha Devaraj, Surabhi Sonam & Deepika Singh
Paper # 6	▪ **Performance Comparisons of Single & Multipath Routing Protocol over MANETs.** International Journal of Computer Science and Information Technology. (Vol.3 No.1 Jan-June 2010). Kunal Dawn, Medha Devaraj, Surabhi Sonam & Deepika Singh
Paper # 7	▪ **Investigation of Educational Content Delivery in Villages Using Bus Assisted DTN and its Simulation Analysis.** CiiT International Journal of Networking and Communication Engineering (Vol.7 No.2 Jan 2015). G. Niranjana, Kunal Dawn

INTERESTS

Programming is my hobby and passion. I spend most of my active free time programming, reading open-source codes and understanding their basic architecture. I like developing small automation tools and experimenting with hobby projects.