Professional Growth

I have completed two years at NEC as a data science researcher. Over the two years, I worked on SAR image processing and created applications for monitoring earth surface. Projects I worked on at NEC:

1. Soil moisture estimation using SAR images [oct16 – mar17]
2. Comparative evaluation of feature extraction approaches [Apr17-Sept17]
3. CNN-based ship classification incorporating SAR geometry information [Sept17-Mar18]
4. Change detection between multi-temporal SAR images (Ongoing) [Apr18-now]

Through these projects I learnt the following technical skills:

Knowledge: SAR image processing, Deep learning, Machine Learning basics

Tools: Python, OpenCV, Keras, scikit-learn, ENVI, pandas, numpy, matplotlib, GDAL, LINUX

I developed research and project management skills by working on the above projects The skills are:

1. Setting Goals using SMART method
2. Making Project Timeline (setting milestones, resources needed)
3. Literature Survey (understanding trends and selecting good baselines)
4. Critical Thinking to find research-gaps/problems
5. Data Analysis and Coding (writing readable codes, organized code versions and collect results)
6. Technical Writing (Internal Reports and Research Papers)
7. Presentation and Communication (making good and easy-to-understand slides/poster and present confidently)

I wrote my first patent specification on ship classification project through which I learnt:

1. What is a patent system? Conditions to prove patentability
2. How to write a patent proposal?
3. How to write a patent specification?
4. What are claims and how to write them?

Apart from this I developed inter-personal skills and leadership skills through following activities:

1. Organized meeting with Prof. Yuliya and Prof. Lorenzo an exchanged information
2. Initiated collaboration with GMV Spain
3. Organized meeting with NEC Labs Europe and exchanged information
4. Creates ASP-TG Notice Board in Challemon
5. Initiated research collaboration and opportunity for selling ASNARO-2 data to AIST
6. Created contacts in IGARSS and SPIE Conference

Other things I learnt:

1. Organization of office work and research work
2. Time-management (still needs to be improved)
3. Writing good emails
4. Professional attitude and taking responsibility of my work
5. Importance of self-learning
6. Staying calm, composed and gentle
7. Handling conversation with people from different countries
8. Maintaining Research Journal
9. How to present my achievements in performance evaluation?

Apart from office work, I devoted significant time in self-learning. I mastered the following technical subjects through self-learning:

1. Probability
   1. MIT Course
2. Machine learning Basics
   1. Andrew NG course
   2. Blogs: machinelearningmastery, analytics vidya
3. Deep Learning Basics
   1. CS231
   2. Deep learning specialization
   3. Blogs: keras, random
4. OpenCV
   1. Udemy course
5. Programming
   1. Sendtex for python
   2. CS50 for general problem solving
6. SAR:
   1. Natural Resources Canada
   2. University of Alaska

Personal Growth

Apart from professional growth, I learnt many new things about life in general:

1. Positive Thinking and the power of thoughts and vibrations
2. Happiness- what causes it, Hygge, Principles to lead a happy life
3. Ikigai
4. Time-management from ‘Eat that Frog’
5. Trip planning
6. Nutrition
7. PCOD
8. Home management

Some Tips for myself:

1. Reflect every year on how I have grown in different facets of life: professionally, socially, personally (thinking), health-wise and new skills/hobbies
2. Set goals for each facet for next year-
   1. professional goals (projects, skills, networking)
   2. social goals (social work for non-profit, family)
   3. personal goals (positive thinking, health, hobby, books, travel)
3. Separate happiness and goals
4. Set small milestones for each goal and keep a rough track of your progress.
5. Enjoy the process of learning!
6. Do not over plan everything :P Plan just enough to get you started and then DO!!!!
7. Embrace randomness and surprises. Be open to new opportunities.
8. Do not do too many things at once. Be focused and learn step-by-step!
9. Create a support circle of friends that motivate me.