

Elevating Python Development with Nix

By **Salar Rahamanian** (www.softinio.com)



PyBay

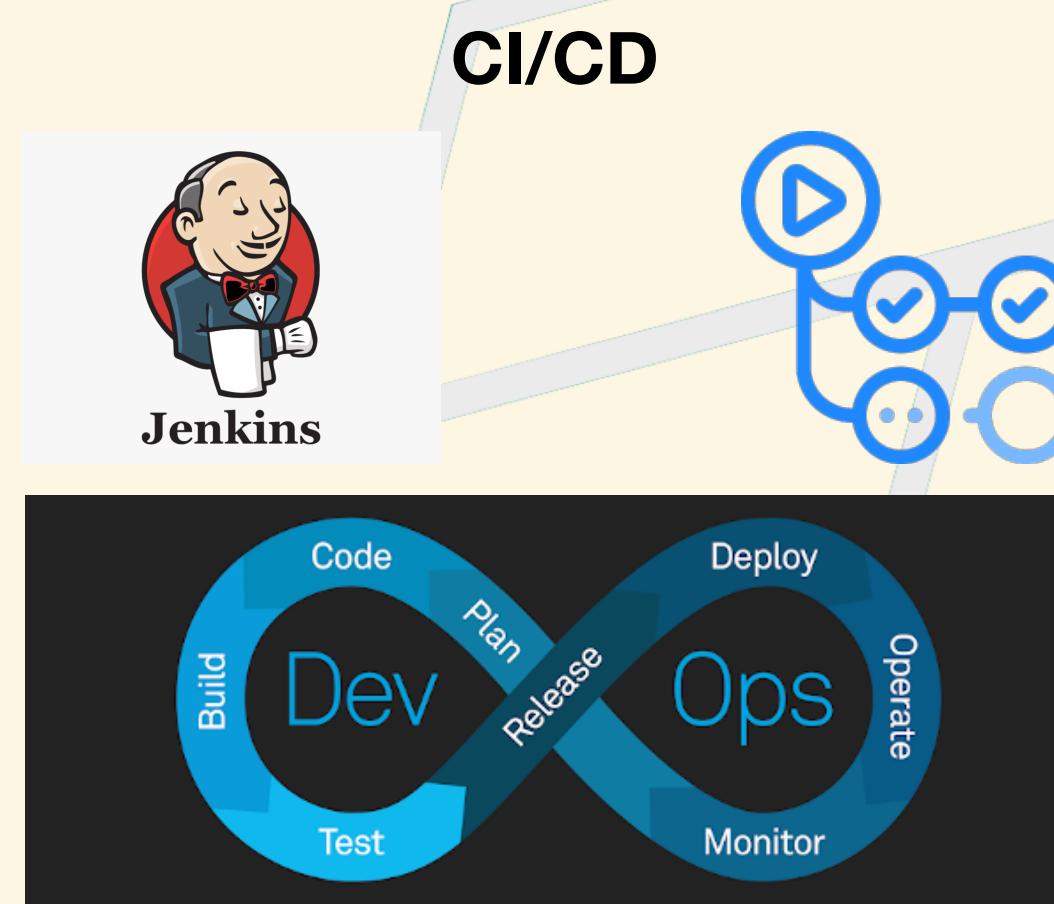
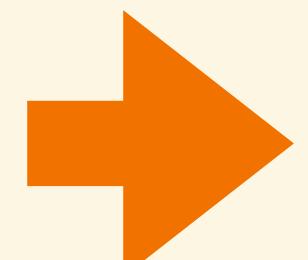


About Salar Rahamanian

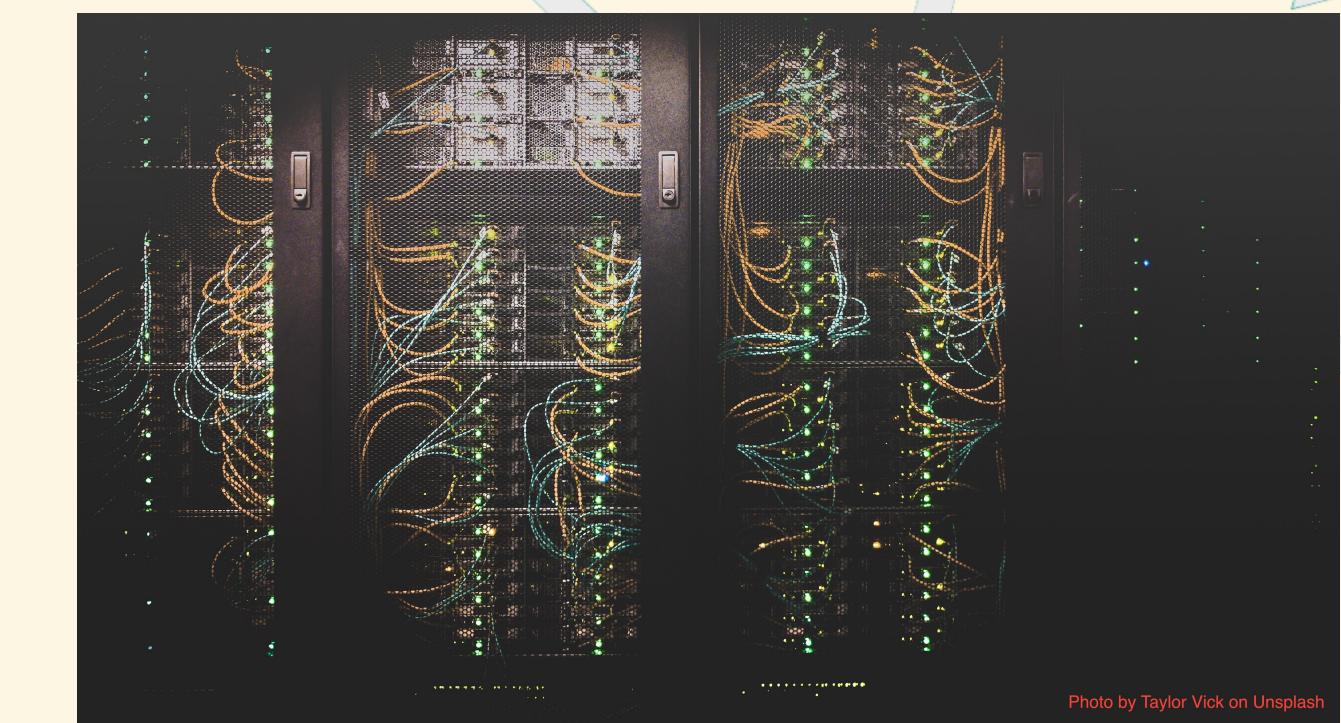
- ▶ Also known as **softinio**
- ▶ My Blog: www.softinio.com
- ▶ Python developer since around 2011
- ▶ NixOS enthusiast and contributor since around 2018



Lifecycle of delivering code



Cloud / Server



Developers Laptop

- ▶ Operating system: MacOS or a Linux variant
- ▶ Install OS developer tools
- ▶ Install packages using homebrew or download from various websites
- ▶ Download python or install pip, pyenv, poetry, pipenv, pip-tools
- ▶ Install python
- ▶ Install Python dependencies
- ▶ Install your services like postgresql, Kafka , spark

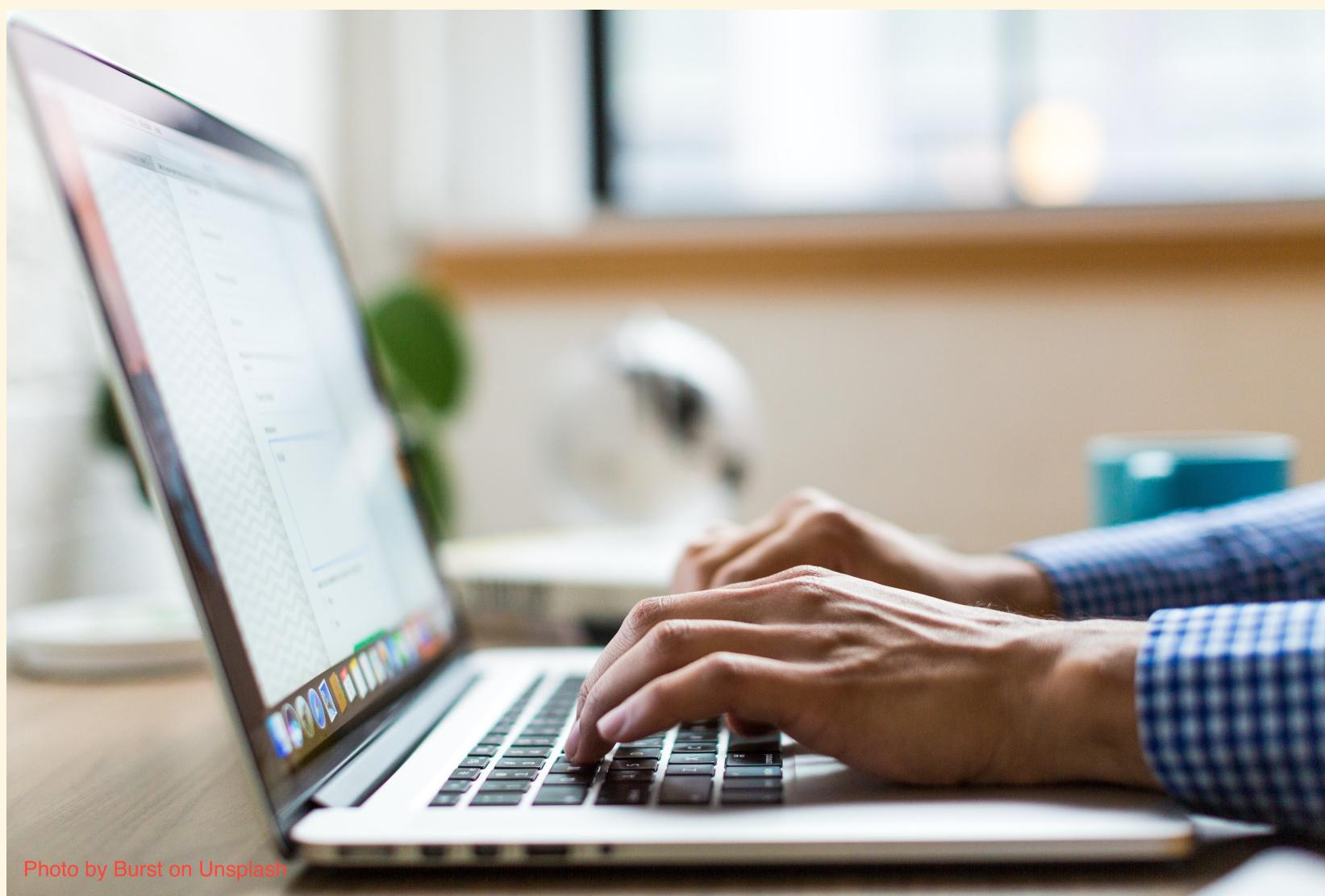
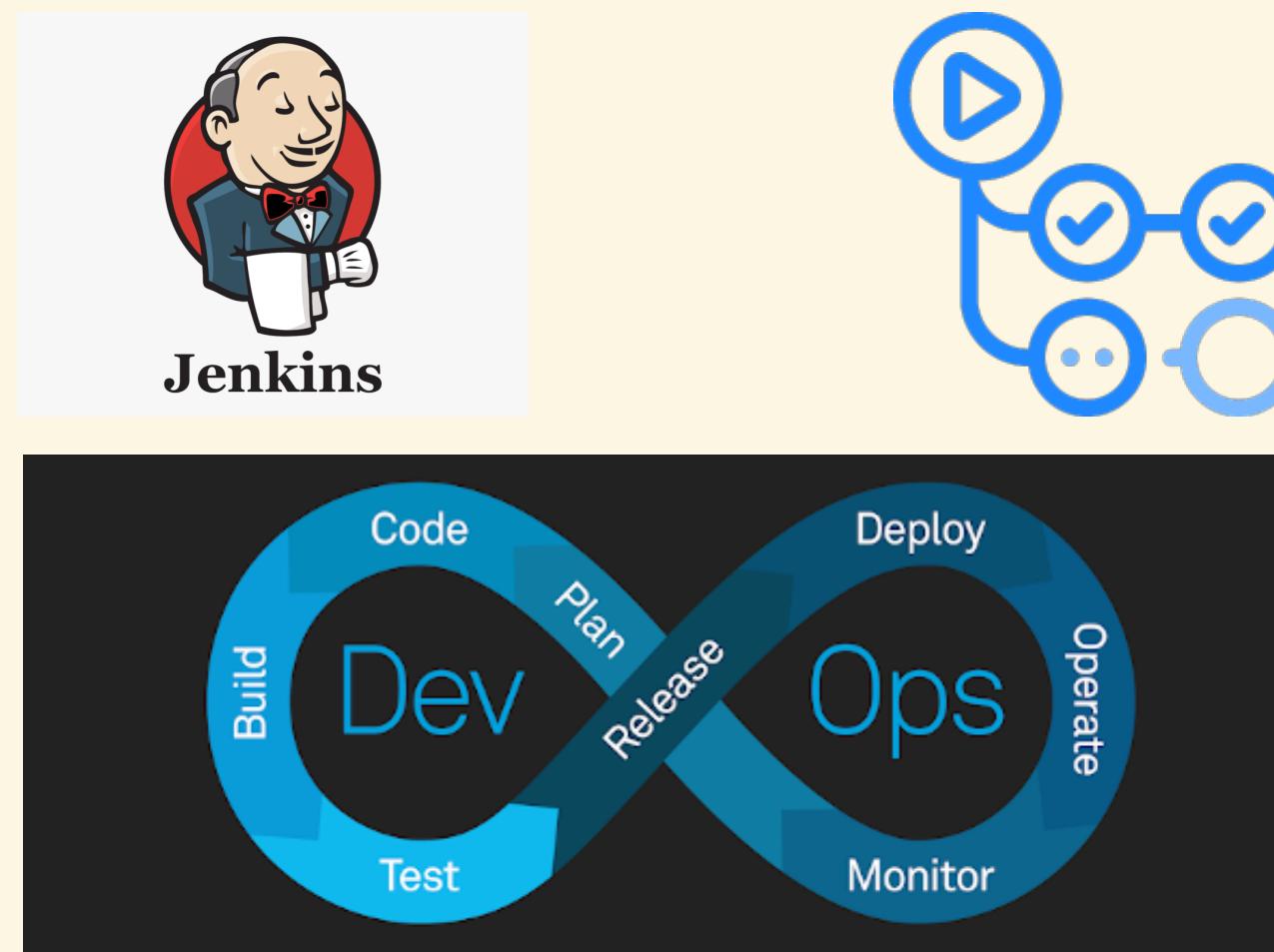


Photo by Burst on Unsplash

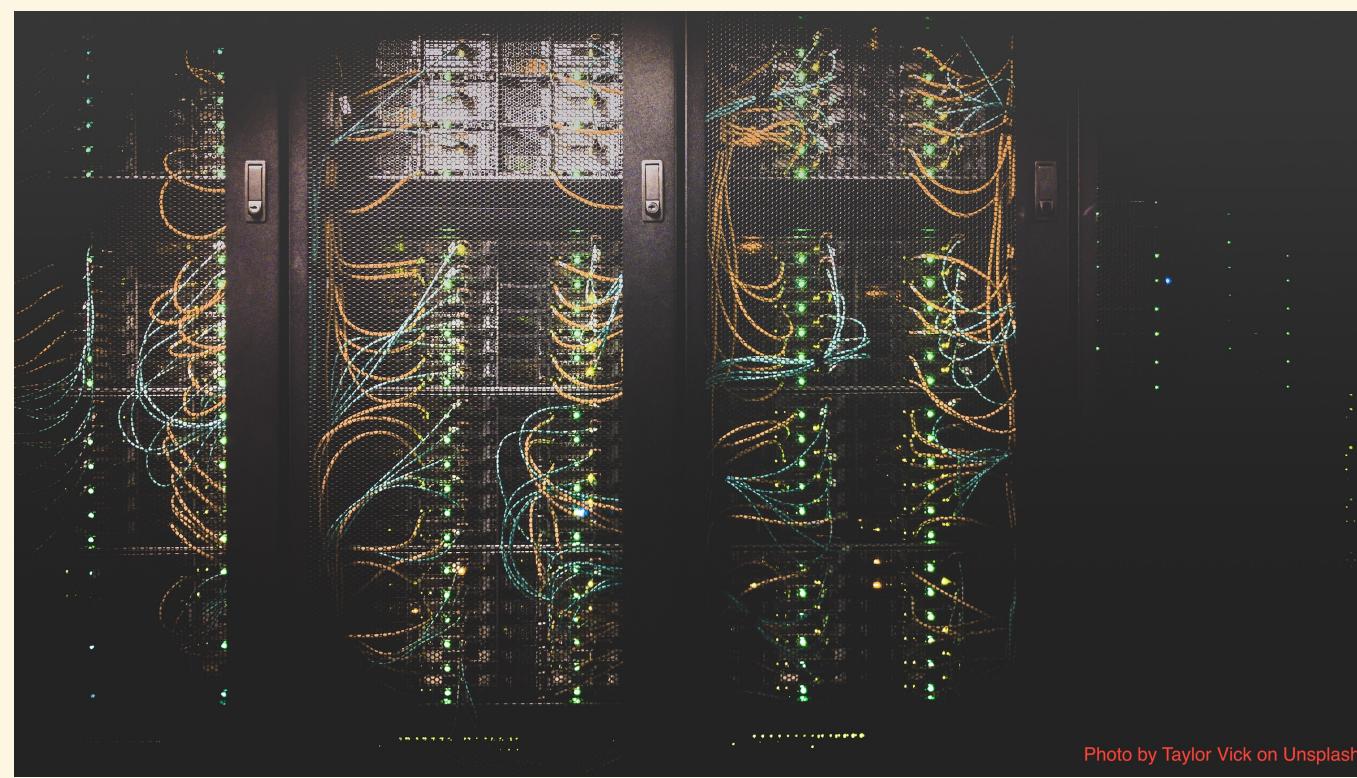
CI / CD



- ▶ Operating system Running Linux (maybe inside a container)
- ▶ Install OS developer packages
- ▶ Install extra packages
- ▶ Download python or install pip, pyenv, poetry, pipenv, pip-tools
- ▶ Install python
- ▶ Install Python dependencies

Cloud / Server

- ▶ Operating system Running Linux (maybe inside a container)
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Problem Statement

Variations between our various environments and tools have consequences

- ▶ Non-deterministic
- ▶ Not Reproducible
- ▶ Unreliable
- ▶ Lost Developer Time



Photo by Yogendra Singh on Unsplash

Lost Developer Time

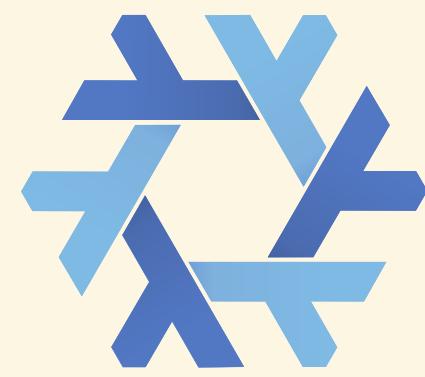
There is a cost: MONEY 💰 and reduced VELOCITY 🚀 to deliver

How is our time spent:

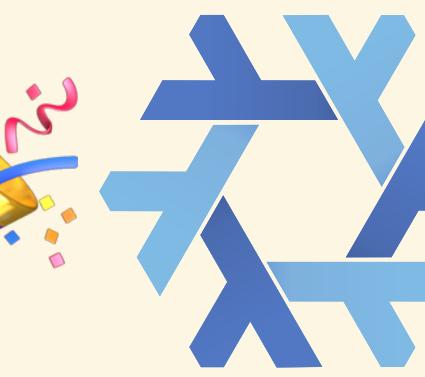
- ▶ Fixing issues
- ▶ Configuration and setup of our projects in the different environments
- ▶ Setting up services our project needs
- ▶ Testing our work in the different environments

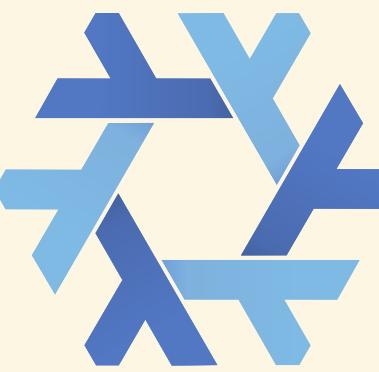


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Nix is the solution





Nix is the solution



- ▶ Nix Package Manager
- ▶ Nix Expression Language
- ▶ NixOS

What is Nix?

Nix Package Manager



- ▶ It's a package manager
- ▶ It's Programming Language agnostic
- ▶ One tool, one way of building and testing,
everywhere 
-but many programming languages!

What is Nix?

Nix Expression Language

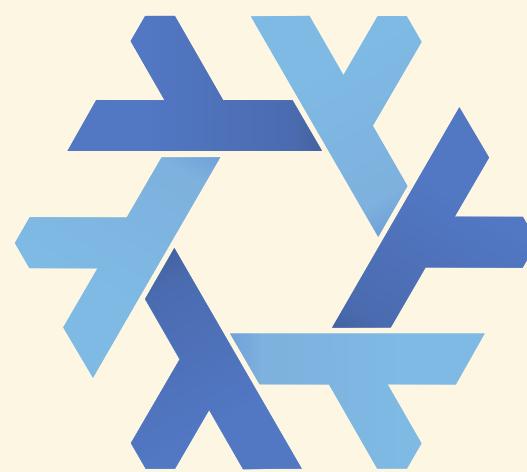


- ▶ It's a Functional Programming Language
- ▶ It's used to add packages to Nix Package manager
- ▶ You use it to tell Nix how to build, test & deploy
- ▶ You use it to configure and setup your environment and services
- ▶ It has curly bracket 😜 { } 😂

What is Nix?

NixOS

- ▶ It is its own Linux OS distribution
- ▶ It uses Nix package manager
- ▶ It uses Nix Expression Language to configure and set it up



NixOS



Show and Tell

Resources

- ▶ <https://nixos.org/>
- ▶ <https://zero-to-nix.com/>
- ▶ <https://devenv.sh/>
- ▶ <https://www.youtube.com/c/NixCon>
- ▶ <https://scribe.github.io/nix-workshop/index.html>
- ▶ <https://www.tweag.io/blog/2020-05-25-flakes/>
- ▶ <https://watch.softinio.com>
- ▶ <https://www.softinio.com>



See you at
www.scale.bythebay.io

November 14th/15th 2023

🙏 **Thank You for attending my talk** 🙏

Follow my work and keep in touch via ➡ www.softinio.com ➡

