

Erfaringer med RPA

Universitet i Agder

”

Magiske software hender som gjør ting

Integrasjon

- Den hellige gral
- API / Webservice
- Lar seg enkelt skalere
- Godt dokumentert (som regel)
- Må tilrettelegges av produsenten

Tradisjonell automatisering

- Scripting (Powershell / Python / Shell)
- Snakke med bakenforliggende systemer
- Fil og databehandling

UI Automatisering

- Benytter brukergrensesnittet
- Tre ulike prinsipper:
 - Attributter
 - Bilde- og tekstgjenkjenning
 - Koordinater

UI Automatisering: Attributter

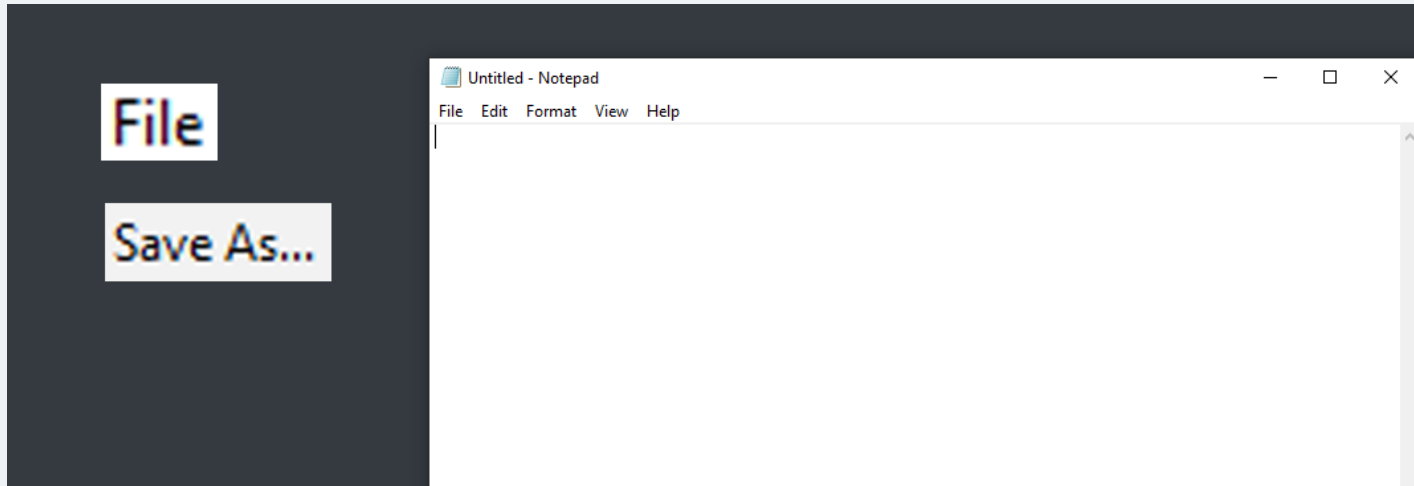
The screenshot displays the UI Spy application, which is used for inspecting the UI of running applications. It shows two windows: 'Untitled - Notepad' and 'UISpy - Running with limited user access'.

The 'UISpy' window is divided into two main panes:

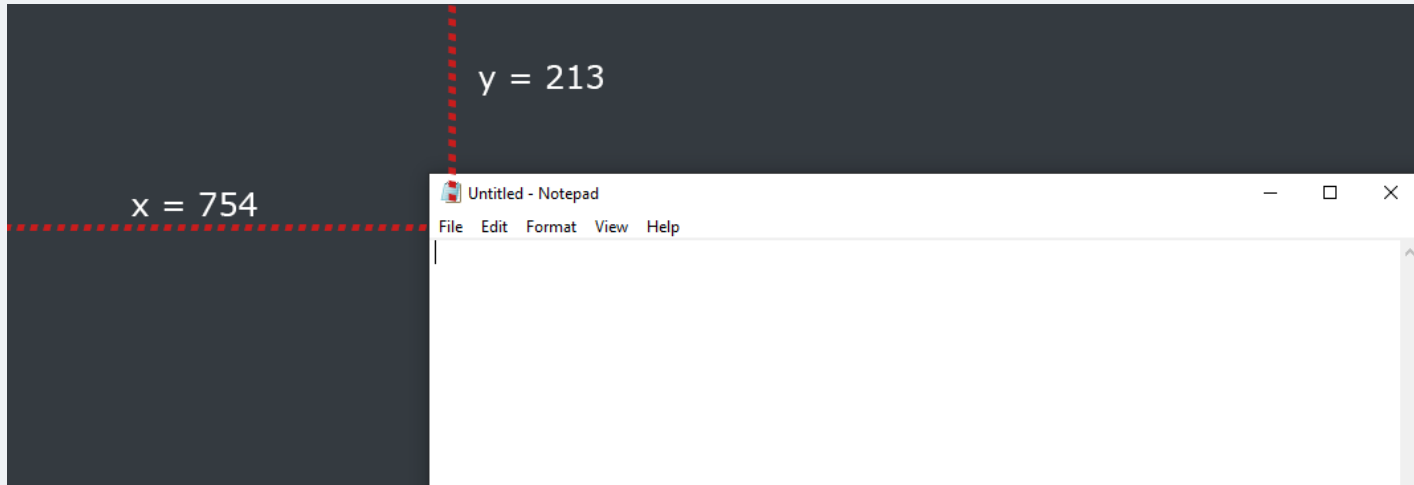
- Control View:** A tree view showing the UI hierarchy. The selected element is the 'File' menu item, with its path being: "pane" "cloud-backup-ui" (Desktop Window) > "pane" "" > "pane" "" > "pane" "" > "window" "IT-hjelp (IT-avdelingen) | Microsoft Tea..." > "window" "Untitled - Notepad" > "document" "Text Editor" > "title bar" "Untitled - Notepad" > "menu bar" "Application" > "menu item" "File".
- Properties:** A list of attributes for the selected 'File' menu item.

Category	Property	Value
AutomationElement	General Accessibility	
	AccessKey:	"Alt+F"
	AcceleratorKey:	""
	IsKeyboardFocusable:	"True"
	LabeledBy:	"(null)"
HelpText:		""
		""
State	IsEnabled:	"True"
	HasKeyboardFocus:	"False"
Identification	ClassName:	""
	ControlType:	"ControlType.MenuItem"
	Culture:	"(null)"
	AutomationId:	"Item 1"
	LocalizedControlType:	"menu item"
	Name:	"File"
	ProcessId:	"21556 (notepad)"
	RuntimeId:	"1 723244 528267 0"
	IsPassword:	"False"
	IsControlElement:	"True"
	IsContentElement:	"True"
Visibility	BoundingRectangle:	"(2016, 292, 32, 19)"
	ClickablePoint:	"2031,301"
	IsOffscreen:	"False"

UI Automatisering: Bilde- tekstgjenkjenning



UI Automatisering: Koordinater



Automatisk installering av skriver

RPA (Automatisering av nettleser)

To sign in, please enter your username and password below.

Username:

Password:

Login

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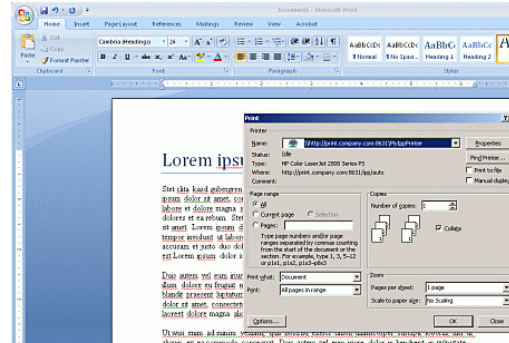
Print Directly From Within Your Applications

How Driver Print works:

1. Setup your computer (it's easy!).
Get started below!



2. Print your documents just like printing to a normal printer
3. Documents you send to print are automatically sent to the following printer: UiA-Print



1. Get Started! Select Your Operating System:



My Print Jobs

Web Print

Driver Print

Email Print

Configuring Driver Print On Windows 10

Please choose how you would like to print:

- Simple (1)** Print as easy as possible, no printer driver to download, just simple configuration
- Simple Direct (2)** Easy setup, no printer driver to download, but print to a specific print queue
- Advanced (3)** Print using a printer driver designed for the output printer, allowing use of advanced output features. May involve download and installation of driver.

Continue



My Print Jobs

Web Print

Driver Print

Email Print

Advanced Driver Print

Advanced Driver Print will let you print using a driver which is designed for the output printer, letting you use advanced functionality available in the printer.

Add the printer queue to your computer, and print directly from within the programs you use.

1. Select Destination Printer

Begin by choosing the printer that you would like to print to, and instructions specific to that printer will be shown.

- UiA-Print
- UiA-farge
- UiA-svart-hvitt

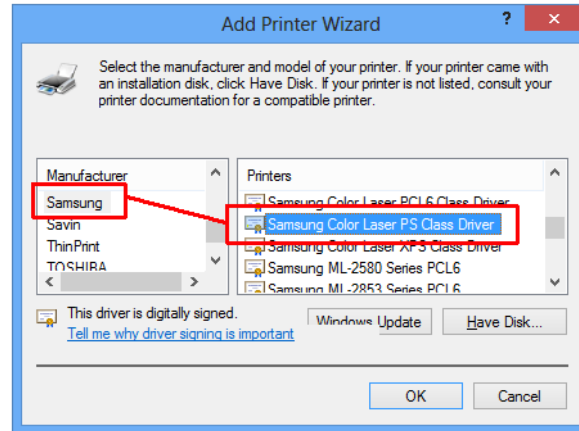


Choose the driver for the printer model specified below or click **Have Disk...** to install driver, and click **OK**.

Print queue: **UiA-farge**

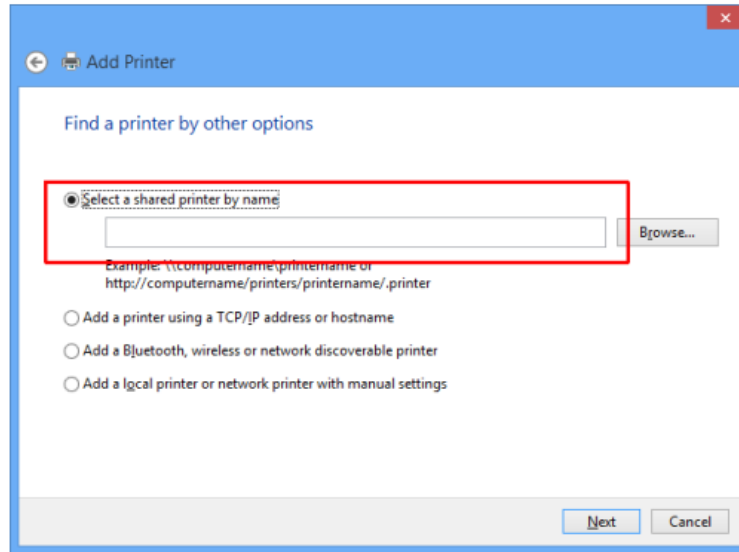
Printer model: **RICOH Aficio MP C5000 PCL 6**

IMPORTANT! You must choose driver for the printer model as specified above, or the print jobs will not print correctly.





Click the **Select a shared printer by name** and enter the exact address below followed by **Next**:



http://print.uia.no:631/ipp/r/2ecrgdcgtwa3256/EFAD5A86







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Velg programmer du ønsker å installere:

 **Skrivere** 
Installerer universitetets skrivere på din datamaskin.

 **VPN** 
Få tilgang til interne tjenester hjemmefra.

 **Office 365** 
Installerer gratis Office 365 på din datamaskin.

 **Apps Anywhere** 
Installerer Apps Anywhere på din datamaskin. Krever VPN.

 **Safe Exam Browser** 
Program for gjennomføring av Inspira.

Version: 3.4.3

Installer

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Enkelte programmer krever pålogging:

[Lag nytt passord](#)
[Finn brukernavn](#)

Tilbake **Logg inn**

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Installerer valgte programmer:


Installerer: Skrivere (1/1)

Installerer... 40%

Avbryt

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Følgende ble installert:

- Skrivere 

Installer flere **Avslutt**

Automatisering av SAP

RPA via Citrix Receiver

Automatisering av SAP: Utfordringer

- DFØ SAP
 - Ingen webservice
 - Begrenset og manuell fil-import
- Benytter Citrix Receiver
- Treghet og nedetid

Automatisering av SAP

- Python og Google Tesseract OCR
- Automatisk oppkobling til SAP
- Endring av persondata
 - E-post
 - Rom
- Registrering av timelister

Erfaringer rundt RPA

- Vi bruker stort sett C# og Python
- Det er mye som kan gå galt
 - Mange avhengigheter
 - Skalerer dårlig
- Vi anser UI automatisering som «Siste utvei»
- Webservice for styring og overvåkning