

# Building AI Agents with AutoGen

Strategy Agent and Tools

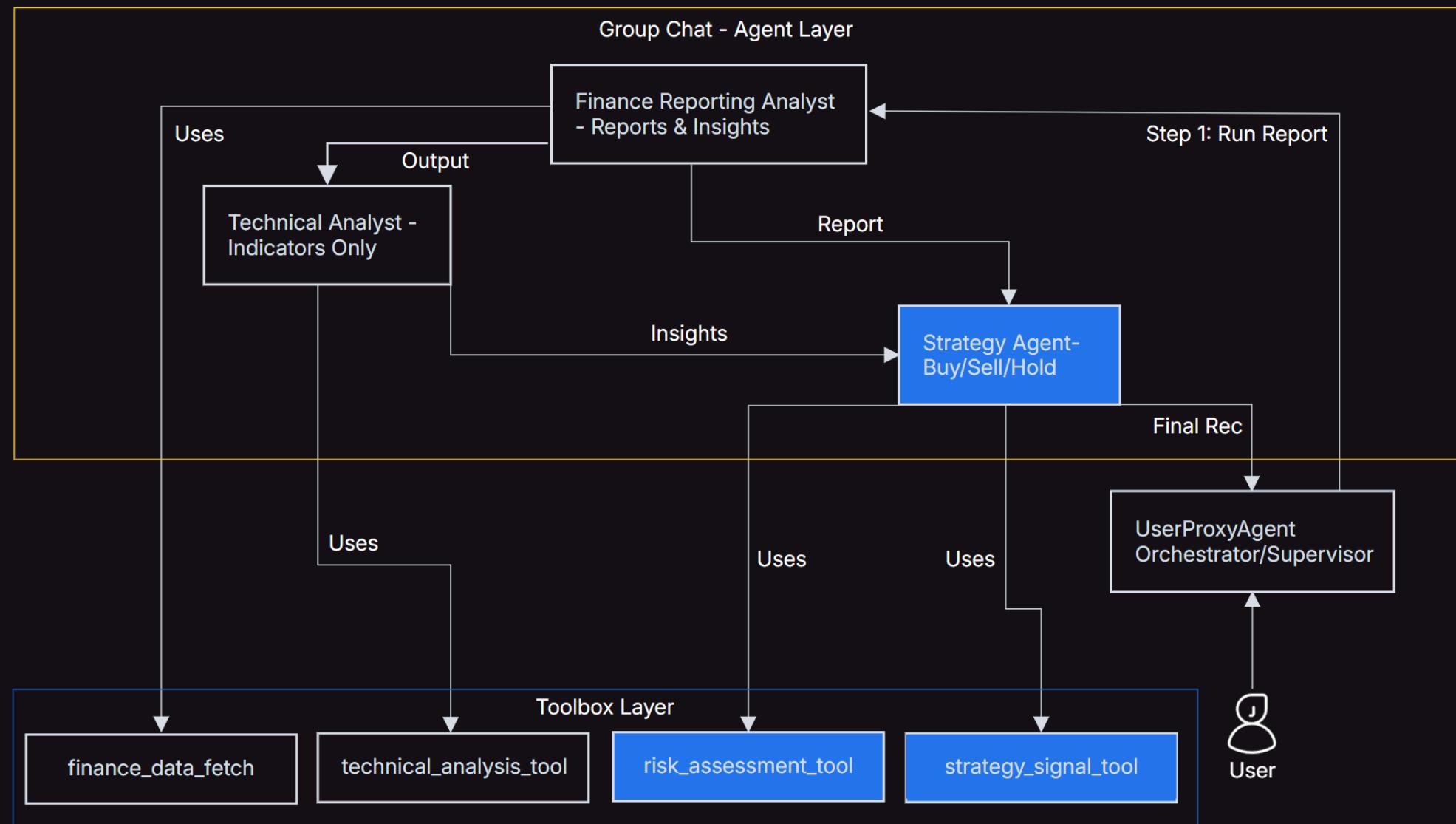
Nitin Agarwal

Principal Data Scientist

Ex-Microsoft

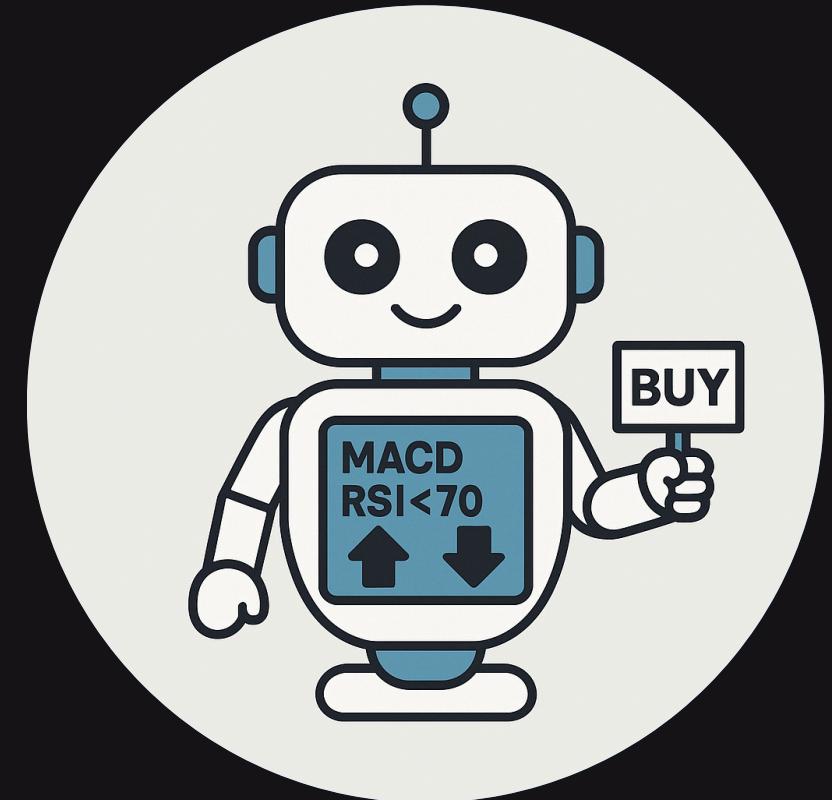


# Agents and Tools for Financial Analysis



# Agent 3 – Strategy Agent

- Role
  - Recommend Buy/Sell/Hold actions and assess risk
- Responsibilities
  - Analyze trading signals: MACD, RSI, Last Close
  - Evaluate risk: Volatility, Beta, Dividend Yield
  - Provide rationale behind recommendation
- Decision Logic
  - Buy if  $\text{MACD} > \text{Signal}$  and  $\text{RSI} < 70$
  - Sell if  $\text{MACD} < \text{Signal}$  or  $\text{RSI} > 70$
  - Hold if indicators are conflicting
- Tool Used
  - `risk_assessment_tool`, `strategy_signal_tool`



# Tool 3: risk\_assessment\_tool

- **Purpose:** Analyze the stock's risk profile
- **Metrics Extracted:**
  - Beta (volatility)
  - Market Cap
  - Dividend Yield
  - 52-week Change (Volatility proxy)
  - Risk Rating (High / Moderate / Low)
- **Used by:** strategy\_agent for risk-informed recommendations
- **Error Handling:** Graceful fallback with error message in JSON

```
{  
  "name":  
    "risk_assessment_tool",  
  "data": {  
    "Beta": 1.15,  
    "MarketCap":  
      300000000000,  
    "DividendYield": 0.005,  
    "Volatility": 0.18,  
    "RiskRating": "Moderate"  
  }  
}
```

# Tool 4: strategy\_signal\_tool

- **Purpose:** Buy/Sell Signals - Support decision-making
- **Indicators Used:**
  - MACD (Momentum)
  - MACD Signal Line
  - RSI
  - Last close price
- **Used by:** strategy\_agent for buy/sell/hold recommendations
- **Error Handling:** Graceful fallback with error message in JSON

```
{  
  "name":  
    "strategy_signal_tool",  
  "data": {  
    "MACD": 1.43,  
    "MACD_Signal": 1.12,  
    "RSI": 63.5,  
    "Last_Close": 192.32  
  }  
}
```

# Hands-On