
Subject: Spline returns NaN values

Posted by [jakebrinkmann](#) on Tue, 17 Mar 2015 17:19:14 GMT

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Hi there,

I'm hoping someone can enlighten me about cubic spline fitting. I have a dataset of y vs x, but I want to get a finer resolution dataset at xx indexes:

```
x = [0.5372973, 0.5382103, 0.5392305, 0.5402197, 0.5412042, 0.54221, 0.543209,$  
      0.5442277, 0.5442277, 0.5452125, 0.546217, 0.5472153, 0.5482086,$  
      0.5492241, 0.5502117, 0.5512249, 0.5522136, 0.5532056, 0.5532056,$  
      0.5542281, 0.5552039, 0.5562125, 0.5567836]
```

```
y = [0.01, 0.03108, 0.08981, 0.18362, 0.32167, 0.50941, 0.72415, 0.90698,$  
      0.9071, 0.97955, 0.99802, 1.1, 0.97863, 0.9323, 0.85344, 0.72936,$  
      0.56413, 0.36997, 0.36957, 0.17623, 0.05922, 0.0163, 0.01]
```

```
xx = [0.5372981, 0.5374106, 0.5375231, 0.5376356, 0.5377481, 0.5378606,$  
      0.5379731, 0.5380856, 0.5381981, 0.5383106, 0.5384231, 0.5385356,$  
      0.5386481, 0.5387606, 0.5388731, 0.5389856, 0.5390981, 0.5392106,$  
      0.5393231, 0.5394356, 0.5395481, 0.5396606, 0.5397731, 0.5398856,$  
      0.5399981, 0.5401106, 0.5402231, 0.5403356, 0.5404481, 0.5405606,$  
      0.5406731, 0.5407856, 0.5408981, 0.5410106, 0.5411231, 0.5412356,$  
      0.5413481, 0.5414606, 0.5415731, 0.5416856, 0.5417981, 0.5419106,$  
      0.5420231, 0.5421356, 0.5422481, 0.5423606, 0.5424731, 0.5425856,$  
      0.5426981, 0.5428106, 0.5429231, 0.5430356, 0.5431481, 0.5432606,$  
      0.5433731, 0.5434856, 0.5435981, 0.5437106, 0.5438231, 0.5439356,$  
      0.5440481, 0.5441606, 0.5442731, 0.5443856, 0.5444981, 0.5446106,$  
      0.5447231, 0.5448356, 0.5449481, 0.5450606, 0.5451731, 0.5452856,$  
      0.5453981, 0.5455106, 0.5456231, 0.5457356, 0.5458481, 0.5459606,$  
      0.5460731, 0.5461856, 0.5462981, 0.5464106, 0.5465231, 0.5466356,$  
      0.5467481, 0.5468606, 0.5469731, 0.5470856, 0.5471981, 0.5473106,$  
      0.5474231, 0.5475356, 0.5476481, 0.5477606, 0.5478731, 0.5479856,$  
      0.5480981, 0.5482106, 0.5483231, 0.5484356, 0.5485481, 0.5486606,$  
      0.5487731, 0.5488856, 0.5489981, 0.5491106, 0.5492231, 0.5493356,$  
      0.5494481, 0.5495606, 0.5496731, 0.5497856, 0.5498981, 0.5500106,$  
      0.5501231, 0.5502356, 0.5503481, 0.5504606, 0.5505731, 0.5506856,$  
      0.5507981, 0.5509106, 0.5510231, 0.5511356, 0.5512481, 0.5513606,$  
      0.5514731, 0.5515856, 0.5516981, 0.5518106, 0.5519231, 0.5520356,$  
      0.5521481, 0.5522606, 0.5523731, 0.5524856, 0.5525981, 0.5527106,$  
      0.5528231, 0.5529356, 0.5530481, 0.5531606, 0.5532731, 0.5533856,$  
      0.5534981, 0.5536106, 0.5537231, 0.5538356, 0.5539481, 0.5540606,$  
      0.5541731, 0.5542856, 0.5543981, 0.5545106, 0.5546231, 0.5547356,$  
      0.5548481, 0.5549606, 0.5550731, 0.5551856, 0.5552981, 0.5554106,$  
      0.5555231, 0.5556356, 0.5557481, 0.5558606, 0.5559731, 0.5560856,$  
      0.5561981, 0.5563106, 0.5564231, 0.5565356, 0.5566481, 0.5567606]
```

```
yvals = spline(x, y, xx)
```

This code gives me -NaN values, but I am not understanding why. Is my dataset too sparse for cubic spline interpolation?

Any help is greatly appreciated. Thank you for reading!

Subject: Re: Spline returns NaN values

Posted by [Jeremy Bailin](#) on Tue, 17 Mar 2015 17:42:21 GMT

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It's because you have a couple of repeated x values: 0.5442277 and 0.5532056.

-Jeremy.

Subject: Re: Spline returns NaN values

Posted by [jakebrinkmann](#) on Tue, 17 Mar 2015 17:53:49 GMT

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On Tuesday, March 17, 2015 at 1:42:23 PM UTC-4, Jeremy Bailin wrote:

> It's because you have a couple of repeated x values: 0.5442277 and 0.5532056.

>

> -Jeremy.

Thank you so much for your very keen observation! Removing the duplicate values worked!
